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A CASE OF LATERAL HEMIANOPSIA DUE TO A PUNCTURED WOUND OF THE BRAIN.

By A. B. McKee, Ph.B., M.D.

Read before the Medical Society of the State of California.

The comparative rarity of cases of hemianopsia, due to punctured wounds of the brain, in which the effects of the injury are limited to a small area, and which, hence, permit accurate localization, has lead me to report the following case. Before entering upon a description of the case, a short review of the anatomy of this portion of the brain and a few notes of similar cases may serve to assist us in locating the lesion.

The optic nerves undergo a partial decussation at the chiasm, each tract thus containing the fibres from the corresponding sides of the two retinæ. The left tract being made up of fibres from the temporal half of the left retina and the nasal half of the right retina; the right tract containing the fibres from the two right halves. From these facts, it is evident that lateral hemianopsia must be due to a lesion of some part of the visual apparatus of the opposite side at or behind the optic commissure. In addition to these fibres, certain other intra-cerebral fibres turn backward to the hemisphere on each side at the posterior part of the chiasma. The optic tracts continue backward to the posterior part of the optic thalamus, beneath which they divide into two parts; the outer, larger division, goes to the optic thalamus, external corpus geniculatum, and anterior corpus quadrigeminum. From each of these centers, fibres pass to the posterior (sensory) portion of the internal capsule, and thence to the white substance of the occipital lobes in the region of the calcarine fissure. Some fibres of the tracts are said to pass directly to the hemispheres. The inner root of the optic tract goes to the internal geniculate body, and is said to contain only those fibres which turn backward at the commissure into the opposite tract.

Through the geniculate body the nerve also appears to be connected with the posterior corpus quadrigeminum, and some fibres seem to enter the anterior one. The connection of the optic nerve with the corpora quadrigemina probably subserves the relation between visual impressions and ocular movements. Two nerve bundles, one of which goes to the nucleus of the motor oculi, the other to the cortex, are of great importance. The former regulates the motor functions and reflex action of the pupil, the latter conducts impressions to the visual centers.

The presence or absence of the pupillary phenomena is of great importance in establishing the location of the lesion producing hemianopsia. From the character of the defect in the field of vision alone, the diagnosis cannot be made. If the pupillary reflex be present, it follows that the lesion must be behind the point of communication with the centers for the motor oculi. Great difficulty is experienced in locating such lesions with any degree of exactness because of the intimate relations between the nuclei and because of a lack of knowledge as to their specific functions.

Hemianopsia may accompany lesions of several different centers. The external corpus geniculatum has been commonly regarded as that one of the intermediate nuclei of greatest importance in the visual act, since its atrophy has been observed frequently in cases of long-standing atrophy of the optic tract; however, many recent observations establish the fact that disease limited to the posterior extremity of the thalamus may cause hemianopsia, and hence it is doubtful whether this symptom is due to disease of the geniculate body or of the thalamus. It seems possible that lesions of the optic thalamus may cause hemianopsia. Gower saw two such cases in which no other lesion was present.

In a case of homonomous hemianopsia, Noyes found the pulvinar, occipital lobe, anterior corpus quadrigeminum, external geniculate body and optic tract atrophied.

Cases of disease of the corpora quadrigemina alone are rare, but it is probable that disease of the anterior part causes loss of sight and pupillary action. In most cases of this character there was optic neuritis and involvement of the third nerve.

The characteristic symptoms in disease of the crus cerebri are hemiplegia, involving the lower part of the face as well as the limbs, and paralysis of the third nerves. Owing, however, to the intimate relations between the crura and the optic tracts, tumors of the former very commonly involve the latter and cause hemianopsia.

Ferrier believes that hemianopsia may result from lesions affecting the occipital lobe and angular gyrus, independent of any implication of the optic tract or corpora geniculata, and experiments seem to demonstrate the truth of this assumption. Charcot, however, inclines to the belief that the tract is always affected.

Hemiplegia, temporary or permanent, is the most usual complication and is always on the same side as the blindness. Hemianesthesia, or speech defect, is occasionally present. In disease of the optic thalamus, hemiplegia is frequently present and is due to disturbance of the adjacent part of the internal capsule. Sensation is not impaired by lesions confined to the thalamus.

When the lesion is in the occipital lobe, blindness on both sides may follow. Dehio describes a case of hemorrhage into the occipital lobe in which the diagnosis was made from the symptom of hemianopsia and in which the autopsy confirmed the diagnosis.

A case is described in which right lateral hemianopsia with progressive blindness was present without hemiplegia, hemianesthesia or optic neuritis. The autopsy disclosed glio-sarcoma of the left optic thalamus, chiefly in the pulvinar, though involving the tubercle and, to a less extent, the caudate nucleus.

Leyden reports a case of well marked homonomous hemianopsia in which the pupils reacted only when the left retinal halves were stimulated. The *post-mortem* examination revealed a spindle-shaped area of softening in the right lenticular nucleus, extending forward to the crus cerebri and involving the optic tract.

Noyes says that sectoral defects, homonomous in character, are due to lesions of the cortex of the occipital lobe in the neighborhood of the cuneus. In these cases there may be an absence of other significant symptoms, except possible agraphia, alexia and mental blindness. Sectoral defects may arise from lesions of the tracts, but paralysis, anesthesia or other symptoms point to involvement of the temporal lobes or base.

Vialet concludes, after reviewing a number of cases, that hemianopsia may be either cortical in origin or may depend upon a lesion of the conducting apparatus, and that when cortical, the lesion is on the internal surface of the occipital lobe, at the level of the calcarine fissure. The optic tracts are often pressed upon by tumors, generally located in the central ganglia. In Gower's case, a tumor of the tempero-sphenoidal lobe extended through the tract to the cerebral peduncle. In one other case, a tumor of the gyrus fornicatus exercised pressure upon the tract.

Wilbrand, in "Norris & Oliver's System," gives the following recapitulation to assist in the localization in cases of hemianopsia: (1) The disease may be confined to the optic tract alone. (2) It is impossible to conclude from the shape of the field of vision whether due to lesion of the tract. (3) If to homonomous hemianopsia is added failing visual acuteness of one eye, with corresponding changes in the retained half of the field of this eye, the disease process has extended to the chiasm. (4) If there be nasal hemianopsia of one eye, and blindness or a high degree of amblyopia of the other eye, disease of the tract of the side of the nasal hemianopic defect is probable. (5) Loss of the half of the field of one eye, of a hemianopic character, soon followed by a loss of the homonomous half of the field of the other eye, indicates tract hemianopsia, of which the site is near the chiasm. (6) Bilateral appearance of incomplete homonomous hemianoptic defects, which point to tract hemianopsia, indicate that the point attacked in the tract is situated centrally at some distance from the chiasm. (7) Weakness of one or more cerebral nerves on one side of the body, with homonomous hemianopsia of the other side, followed or accompanied by hemiplegia or anesthesia toward the side of the hemianopic defect, indicates disease of the tract. (8) Hemianopic pupil reaction and homonomous hemianopsia indicate disease of the tract. (9) A slow development of homonomous defect indicates disease of the tract, whilst hemianopsia appearing suddenly (particularly in a previous healthy patient) is often caused by intra-cerebral hemorrhages and emboli. Hemorrhages into the tracts are more of a capillary nature.

The line between the retained and the lost portion of the field of vision is generally sharply defined, but there may be a hazy zone beyond the limit of absolute blindness. The lines of demarcation may run directly through the fixation point, though this is contested by some, but more often the fixation point remains in the seeing portion of the retina. The usual variations are due to individual differences in the decussation of the fibres. Owing to the fact that some of the macular fibres are distributed to each tract, the possibility of an exactly central halving of the field has been disputed. Generally no changes are found in the disc, at least during the early stages. Later, slight pallor may be present.

Two cases of stab wound similar to my case, involving the optic tract, have been described by Steffens and Wernicke. After a punctured wound in the left temporal lobe, there was right-sided hemiplegia and right homonomous hemianopsia, with slight ptosis of the left lid. The hemianopic pupil reaction was present. A diagnosis was made of punctured wound of the left cerebral peduncle at a point where the optic tract lies against it.

In February, 1897, I was consulted by Miss W——, aet. 19, who complained of certain asthenopic symptoms accompanied by headaches, which careful investigation demonstrated to be due to gastro-intestinal disorder. Incidentally the patient mentioned that she had never been able to see objects which lay toward the right side, and that this trouble was the result of an injury received at the age of

3 years. At that time, while playing on a hay-stack, she was struck by a pitchfork which fell a considerable distance. The physician who attended the child at that time very kindly gave me the following particulars of the accident. The patient was struck upon the right side of the head, posterior to the coronal and midway between the saggital and squamous sutures. One tine of the fork penetrated so deeply that considerable force was needed to remove it, and a probe inserted without violence entered to a depth of six inches inward and forward. No hemorrhage or pain ensued. Right hemiplegia made its appearance but gradually disappeared. At the time of her call at my office, the following conditions were noted. Vision of each eye $\frac{15}{20}$; with cylinder $+0.5$ axis vertical $\frac{15}{10}$; opthalmoscopically, nothing pathological was detected. The right half of each field of vision was found to be lacking, the limit of the field reaching to within five degrees of the fixation point. At the first attempt, through faulty methods of procedure, the hemianopic pupil reaction was not evoked; later, however, by the method of Heddaeus, Wernicke's reaction was unmistakable. Upon illuminating the right half of either retina, the pupil contracted promptly, while the light had no effect upon the left halves.

As this simple and most satisfactory method may be unfamiliar to some who are present, as it was to me until recently, it may be said that it consists in placing at each side of the patient, at equal distances, lamps of equal illuminating power, the rays from which are concentrated by lenses held in each hand and by means of which the two halves of the pupil are illuminated alternately.

From the characteristic nature of the symptoms (right-sided blindness, hemianopic pupil reaction and hemiplegia, uncomplicated by other symptoms) it is evident that the lesion is one of the optic tract and immediate vicinity, and from the nature of the injury and direction of the force it is probable that the cerebral peduncle was punctured by the pitchfork.

533 Sutter street.

THREE CASES OF TRIFACIAL NEURALGIA OF DENTAL ORIGIN UNACCOMPANIED BY TOOTHACHE.

By WALTER M. THORNE, M. D, Instructor in Physical Diagnosis, Cooper Medical College, San Francisco.

These cases are especially interesting from the fact that in no one was there the slightest clue to the origin of the pain. In all I examined the teeth roughly, but as the sufferers had all been assured by their dentists that the teeth were sound, I was for a time misled. The diagnosis of these cases is easy for the general practitioner, the transmitted light showing the healthy teeth to be a bright pinkish color, the affected one giving a dark ashy gray hue.

Case I.—Miss M. N——, age 19. Up to the time of this attack her general health was good, with the exception of from time to time suffering from frontal and occipital headache. These attacks would last often as long as a week. Patient well nourished and no history whatever of any predisposing or exciting causes of neuralgia. When I was first called to see this young lady she was suffering intense pain—first in the temporal, then in the orbital branch of the fifth, and soon the whole face became involved. The temperature never ranged higher than 100° F. There was no swelling about the face. For seven days the pain persisted, and soon became so intense as to cause a mild delirium, alternating with hysteria. I called in consultation Dr. W. A. Bryant, and with the electric light the mystery was soon solved. Dr. Bryant can best describe the condition of the offending tooth, and his notes I here append: "Right, lower, first molar; had an amalgam filling placed five years before. Inspection showed slight shrinkage of the posterior surface of filling; percussion elicited slight pain, exaggerated on pressure. Light showed an area of dulness extending well below the gum margin. Extraction. On opening the tooth, pulp canal and nerve canals filled with putrid pus, the filling having been placed over a partly exposed pulp." With extraction all trifacial pain ceased.

Case II.—Mr. G. P. G——, age 39. Up to the time of the attack of neuralgia patient's health had been perfect. He is a strong, full-blooded man, and quite an amateur athlete. When I was first called to see him he was suffering from a severe neuralgia in all the facial branches of the fifth There was considerable pain on pressure over the exit of the nerve, but no elevation of temperature or swelling. For six days the pain resisted all remedies, both old and new. Delirium set in and the patient became unmanageable. I again called in Dr. Bryant, and by the aid of the light we discovered the tooth, which was immediately extracted, and our patient turned over and fell asleep. Dr. Bryant's notes I append: "Upper, right, second bicuspid. Inspection showed gold filling on mesial surface, extending to gingival margin. Percussion negative; very slight pain on pressure; lateral anterior pressure increased pain. Transmission of light showed slight dulness of tooth, more marked at apex. Extraction. Examination: Abscess at apex and an abscess and polypoid condition of alveolus." With extraction all the facial pain ceased.

Case III.—Mrs. J. C. Q——, age 22. When called to see this case patient was suffering intense pain over the right temporal region. The pain soon extended upward over the crown of the head into the occipital region; pain was also referred to the sub-maxillary region. No pain on pressure, no swelling of the face, and no toothache at any time. Patient suffered from headache, mostly confined to the right temple, for the last two and a half years. This, she was told by physicians in the East and South, was due to malaria. Profiting by my previous experience, I lost no time, and called in consultation the patient's dentist. With my own light we examined the teeth, and I made out a condition similar, as I thought, to the two others, but my opinion was shaken by my consultant insisting that the tooth was not at fault. On the fifth day, the pain not subsiding and the patient being delirious, I called in Dr. Bryant. With his powerful light the condition of the tooth was more evident. With the extraction of the tooth the pain ceased. Dr. Bryant's notes of the case are appended: "Lower, left, first molar. Inspection showed large gold filling. Anterior buccal fissure fractured, fracture extending through anterior proximal fissure. Percussion negative; pressure posteriorly but slightly painful. Light showed fractures not extending to root. Extraction. On breaking, chloride zinc filling overlying pulp—pulp canal treated antiseptically, but no filling of any kind in canal. Pericemental inflammation of both roots; no pus." The facial pain was on opposite side to diseased tooth. With extraction all pain ceased.

I have reported these three cases as I consider them of interest—first, because of the complete absence of any history of toothache; second, the long-standing neuralgia, especially in Case III, which was undoubtedly reflex from the tooth; third, the novel mode of making the diagnosis by means of the transmitted light.

To sum up, I would emphasize that in all facial neuralgias the teeth be thoroughly examined, and I have no doubt but that many obscure and unexplained cases will be cleared up.

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LESSONS FROM EXPERIENCE IN ABDOMINAL SURGERY.

By Henry T. Byford, M.D., Professor of Gynecology, Medical Department University of Illinois, and in Chicago Post-Graduate Medical School.

Read before the Tri-State Medical Society, at Dubuque, April 5, 1898.

No man's education is complete until he has taken a few lessons from experience. The abdominal surgeon, of all men, requires this kind of teaching, and he is not fit to be trusted to take all cases as they come to him until he has assisted at or had the assistance of an expert at an hundred operations, at the very least. If all patients requiring abdominal section were our own sisters, mothers or daughters, I think that we would soon agree upon this proposition. What I here report will, I think, bear me out in this statement.

As there are some young men in this audience who may be called upon to do abdominal section, and who believe that they still have something to learn, I have thought that it might be of interest to them to review briefly a few of my early fatal cases, and point out my mistakes for their benefit.

My first three abdominal sections were all difficult ones; two were for ovarian cystomas developed in the broad ligament, and the third and fatal one for a large carcinomatous ovarian cystoma complicated by ascites, and with adhesions to the abdominal parietes and within the pelvis.

My mistakes in this fatal case were that I did not diagnose malignancy beforehand—did not realize the extreme weakness of the patient, and did not thoroughly check the oozing from the parietal adhesions. The patient died in ten hours after the operation from exhaustion. I should have checked the oozing more perfectly and have used strychnine, digitalis and diffusible stimulants freely, both before and after the operation. Saline transfusion was not then known.

My second death was due to a slipping of the ligature and hemorrhage from the pedicle of a large ovarian tumor. I was absent for a few hours after the operation, and opened the wound and sewed up the broad ligament too late to save the patient. Direct transfusion was unsuccessfully tried. My mistake was in not tying the pedicle tight enough, in not being on hand to reopen the abdomen promptly, and in not having at hand better facilities for transfusion. Saline transfusion was still unknown. I was a diligent reader at that time, and had other surgeons who had had the same experience written more often concerning its warnings I might have been forearmed.

My next death was due to the same cause, and I am glad to be able to say that it was the last death of that kind in my experience. I now pass my thread through the ovarian ligament and the fibrous edge of the broad ligament near the pelvic brim, tie tightly and leave plenty of stump beyond the ligature. By using these precautions, and by tying fleshy stumps in several parts, I am able to avoid the accident.

My next death was due indirectly to tapping an intraligamentous ovarian cystoma, but directly to leaving a sponge. I tapped the main cyst. Noticing that the withdrawal of the trocar was followed by some external hemorrhage, I feared internal hemorrhage, and made hasty preparations for an immediate operation. The enucleation of the cyst was slow and tedious, and the nurse got mixed up in her count of the sponges, and told me as I finished that she had them all. The present methods of counting sponges and of putting tapes on them had not then been recommended, nor was this danger in those days appreciated. I am sorry to say that this accident has happened to me once since. I now use gauze sponges, have a certain quantity prepared, and use tapes on all that are to be buried from sight.

My next death was from exhaustion due to the severity of the operation, and constant vomiting for the forty-two hours that she lived. The temperature was low throughout. An ovarian tumor was developed in the left broad ligament large enough to push the uterus up behind the pubes, and a pyosalpinx was adherent on the right side. The patient was under ether nearly four hours and the rectum was torn. I opened up two sutures twelve hours before death and separated the intestines from the incision and from each other. The rectal wound was adherent to the sac of the left broad ligament, near the incision, and had held perfectly. I inserted a drainage tube. The condition after the operation was the same as before, the pulse ranging from 136 upward. I had not had sufficient experience to perform so difficult an operation.

My next death was from septicemia in a case of ovarian cystoma developed in the broad ligament, and was due to a leakage in the broad ligament sac that was stitched into the abdominal wound. This accident has never happened to me since. Besides, we now know that such sacs can be better drained into the vagina. It may be interesting to state that the patient regurgitated everything—all that was swallowed, and that neither gas nor feces could be made to pass *per rectum*, although salines and glycerine enemas had been given repeatedly. About forty-four hours after the operation the abdominal wound was opened up, the leak found and repaired, the blood washed out, and intestinal adhesions separated. Soon afterward the patient had a free movement from the bowels, but she sank and died in four hours.

My mistakes were want of carefulness in sewing up the sac, and delay in performing the secondary operation. I had not had the experience to enable me to decide to do the latter sooner.

My next death was from septic peritonitis forty-eight hours after an ovariotomy for adherent ovarian papilloma The tumor went to pieces in being enucleated from its bed of adhesions. My mistake was not being sufficiently careful in cleansing the peritoneal cavity. The patient was weak, and I tried to operate quickly. However, the pedicle was infiltrated and the pelvis infected, and she might not have survived under other hands than mine, and if she had would soon have died of a recurrence.

My next death was two weeks after the operation from septic exhaustion, due to an abscess in the thigh following a hypodermic injection. The patient had had double pyosalpinx for many years, and came to me in a septic and exhausted state. My mistake was in not doing more to strengthen her before the operation, and in allowing a careless nurse to give the hypodermic injection. The *post-*

mortem examination showed perfect results within the abdominal cavity.

This is the second death traceable directly to a nurse. Several similar, although less grave experiences, have led me to believe that many bad results are obtained and many lives are lost through the imperfect training of nurses in antiseptic *technique*.

My next death was that of an exhausted patient six days after an operation for pyosalpinx. The drainage tube had failed to drain a small space situated laterally at the bottom of the pelvis. At the autopsy an abscess was found. My mistake was probably an imperfect *technique*, and a failure to recognize the presence of the newly-formed abscess.

My next death was from septic peritonitis six days after an ovariotomy for a dermoid cystoma the size of an adult head, universally adherent in the pelvis. It took all of my strength to tear the sac loose from the sacrum. My mistake was inexperience, and possibly an imperfect aseptic *technique*.

Since I have learned to operate with a minimum of disturbance of the intestines I find that my results are infinitely better. In desperate cases like the above I prefer to perform vaginal hysterectomy, then remove the tumor, or as much of it as can be removed *per vaginam*, and pack the oozing bed with gauze.

Whether the next death was due to exhaustion or sepsis I can scarcely decide. The patient was very feeble, and had a large uterine tumor, for which I made an exploratory incision. I found it to be a sarcoma with universal adhesions. I separated some of them, but finding that I was unable to go ahead, I closed the wound, and left a little gauze between the edges of the incision to afford exit to the oozing from the surface of the tumor. The tumor was so soft that, inexperienced as I was, I introduced a small trocar in search of fluid, and was obliged to leave it in place for twenty-four hours to arrest the resulting hemorrhage. Although scarcely any blood was lost, the patient was very weak after the operation, and gradually grew weaker, and died in forty-eight hours. Flatus passed freely *per rectum*, and there was no sign of sepsis until a few hours before death, when the temperature began to rise.

My mistakes were first in not fully appreciating the patient's weak state, in not examining a uterine scraping for a definite diagnosis, in puncturing the tumor, and, perhaps, in not obtaining and maintaining sufficiently aseptic surroundings. In my early practice I always found it difficult to doom a patient to certain death, without giving her the chance of an exploratory incision and a possible curative operation, and I sometimes operated when I ought not to have done so. With regard to sepsis, I had not sufficiently developed an aseptic *technique* to preclude the possibility of infection from assistants and nurses.

My next patient died on the table with the operation not quite completed. The tumor was a uterine sarcoma pressing against the diaphragm, composed of several lobes, two of which were each the size of a pregnant uterus at term. It was adherent everywhere and to everything. The bladder was perforated, and the rectal and vaginal adhesions bled profusely and required suturing after separation of the tumor. It filled the pelvic and abdominal cavities tightly and completely. The broad ligaments had to be sewed up, and large vessels ligated on all sides of the tumor, above and below. If I might be allowed a military expression, I might say that the carnage was frightful, and blood flowed freely on all sides. The pelvic cavity had to be tamponed with iodoform gauze to check the hemorrhage from innumerable small vessels. My mistake was in attempting too much.

My next death was from an abscess under the abdominal incision in a case of abdominal hysterectomy. The autopsy showed that the stump was healthy and surrounded by healthy tissue, but that the abdominal cavity was infected higher up, just under the abdominal incision. My mistake was in allowing a general practitioner to assist me, without knowing anything of his antecedents and without superintending the disinfection of his hands. I know better now.

My next death was from sepsis in forty-eight hours after an operation for a large intraligamentous ovarian tumor, performed two days after the operation just mentioned. Whether the *two* general practitioners who assisted, or the nurses, or myself, infected the patient, I cannot tell. My mistake was imperfect asepsis, and the employment of imperfectly qualified assistants.

My next death was from sepsis thirty-six hours after the enucleation of an ovarian abscess, which burst during enucleation. I washed out the abdominal cavity thoroughly with boiled water, and tamponed the oozing pelvic cavity with a Mikulicz drain. My mistakes were in washing out the abdominal cavity, and thus disseminating the germs, and probably other faults in the *technique*.

My next death was a sudden one a week after an exploratory incision for sarcoma of the broad ligament, with metastatic nodules in the uterus. The intestines were adherent over it. The tumor was not disturbed. A malignant tumor had been removed from the breast two years before. Patient had complained of her heart several times during the week following the operation. There were undoubtedly metastatic deposits about the heart that had not given any evidences to ordinary auscultation. I found such deposits in a similar case which I examined *post-mortem* for another operator. My mistake was in not having her heart examined by an expert before the operation. A study of these deaths will reveal the following shortcomings: An imperfect diagnosis led me several times to operate without knowing what I was going to find, being thus, to a certain extent, unprepared for the emergencies that I met with. The only remedy for this, in a young man, is to read constantly the best native and foreign authorities, the proceedings of the leading special societies, the current writings of those who have had experience, and to associate himself with someone who is doing good work of this kind, to the end that he may learn all that can be taught him, as well as gain considerable experience. In this way he not only becomes ſamiliar with all kinds of intra-abdominal conditions, but he learns to cope with all kinds of complications.

Another cause of trouble lay in not carefully investigating the general condition of the patient. A thorough examination of the heart, lungs and kidneys should be a routine practice. In patients of doubtful vigor, the condition of the blood, the amount of endurance as estimated by the pulse, respiration, muscular strength, nervous systems, etc., should be determined. Chronic septicemia, malaria, habits, idiosyncracies, etc., may also have much to do in directing our line of action with regard to the necessity of unusual preparation, the conduct of the after treatment, or the justifiability of performing a radical operation.

The subsequent treatment and nursing with reference to reopening the wound, the care of the drainage tube, etc., were not always faultless, and the mistakes were such that other inexperienced men would be liable to make even at the present day.

Another fault is one which is quite common in small towns where these operations are not frequently done, viz: An imperfect system throughout the work, which would insure the exclusion of all external sources of infection from assistants or nurses, the proper training of nurses, perfect asepsis in all the details of preparation of the operating room and patient, and the use of the transfusion and hypodermic apparatus, reliability in the counting of sponges, etc.

A want of appreciation of the necessity of extreme care in every detail of operating, such as the proper placing of ligatures, checking of hemorrhage; the toilet of the peritoneum, etc , was the cause of some of these early failures. Tapping got me into trouble twice.

The operator should not only be able to avoid these mistakes, but he should he able to select his cases so as not to operate upon hopeless ones, and thus cut short the patients' lives. He should also keep himself informed upon the latest advances in methods and *technique*, which are constantly improving.

This leads me to remark that to do the best work one must, after a sufficient experience in general practice and general surgery, devote himself to peritoneal surgery as a specialty. One thing has been ostentatiously overlooked by the general surgeon, viz: That the entrance to peritoneal surgery is best made through gynecology. Not only can a large proportion of the operations be advantageously done through the vagina, but the advances and improvements made in peritoneal surgery are so largely made by gynecologists that a thorough knowledge of gynecological literature, including textbooks, periodicals, reports of society transactions, etc., is necessary. No busy man, not a gynecologist, can keep abreast with this, and no one is brought into such familiarity with peritoneal work as he who practises major gynecology. I do not say this as a gynecological bid for peritoneal work, but as a conscientious statement of my firm convictions.

I fear that some of my younger listeners have thought that I did a great deal of bad work even for a young man, but those who have done much work of this kind will appreciate the situation. There is no work in surgery so trying and difficult to the beginner.

With regard to my personal antisepsis, I will say that when I began the work I either took a bath, or washed and disinfected my hands and arms the evening before each peritoneal operation, repeated the same upon arising the next morning, and also just before the operation, besides avoiding contact with sepsis the day before, and I think that I never carried sepsis to the operating table. My assistants usually began their preparation just before the operation.

I now have a special assistant at my operations, who understands asepsis and antisepsis, and I feel that without such skilled assistance I would still occasionally loose patients that are now saved. A better class of trained nurses, working under a more perfect system, is undoubtedly the means of avoiding other deaths.

In those days my mortality was about 15 per cent., whereas I have now had a run of 99 consecutive peritoneal sections without a death. The experience gained from the deaths in my earlier practice has, more than anything else, enabled me to avoid bad results latterly.

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THE VARIOUS USES OF NORMAL SALT SOLUTION IN MEDICINE AND IN SURGERY.

By J. L. MILTON, M. D., Oakland, Cal.

Read before the Alameda County Medical Association.

As this subject is receiving some prominence of late, I thought I would this evening detail the methods and also the various conditions in which it is used.

"Normal Salt Solution," as it is termed, is simply a solution of common salt in water. It is called "normal" because it is made to correspond in specific gravity very closely with the normal serum of the blood, whence the term normal or physiological salt solution. It is prepared by dissolving six grammes of salt in a litre of water, preferably distilled, ʒiss to ℥33⅛ of water, or approximately, a heaping teaspoonful to a quart of water. This, when sterilized, is ready for use. It is rapidly coming into favor in most hospitals, and is taking its place in aseptic surgery, replacing the bichloride and carbolic solutions, and even simple sterilized water.

After the various methods of sterilizing the hands, which generally end with a bath in bichloride solution, it is well to wash in salt solution, thereby removing the surplus bichloride and preventing any of it being introduced into the wound. It is well known that bichloride solutions, even as weak as 1:10,000, have an injurious effect on the tissues, producing a superficial necrosis, and thus rendering inert those delicate processes, by means of which the cells and tissue fluids exert a germicidal power. Again, cases of poisoning have resulted from the use of these solutions.

In abdominal operations especially, bichloride solutions have been discontinued, and plain sterilized water has taken its place. But plain sterilized water has an irritant effect on the endothelium of the peritoneum, rendering the cells inert, favoring the development of adhesions, and the growth of microörganisms. So the plain water is being or should be replaced by the salt solution for all purposes of irrigation, for solutions in which to wring out sponges; and in abdominal operations, when the intestines are exposed, they should be kept warm with towels wrung out of saline solutions.

It is also claimed to be beneficial to fill the abdominal cavity with salt solution, allowing it to remain, especially after a long operation in which the contents have been much handled. It not only soothes the peritoneal surfaces, but, as I shall show later, stimulates the patient.

Dawbarn, of New York, first brought the use of salt solution in threatened death from anesthesia before the medical profession. It has long been recognized that among the methods of exciting a narcotized heart to resume work, one of the most efficient is heat. Dawbarn says that if heat applied over the heart can stimulate it, how much more efficient must be that stimulation when the heat is applied directly to the heart chambers by the blood.

There are here four points to be considered: (1) The point of entrance. (2) The temperature of the solution. (3) The amount. (4) The solution.

As regards the point of entrance, it may be an artery or a vein at the seat of the operation, or one of the superficial veins of the arm. The temperature should be about 110° to 118° F., or about as hot as the hand will bear it. By the time this solution reaches the heart the temperature will have been considerably reduced. Dawbarn sets down as a proper amount to inject, one-half to one pint, but this can be better determined by noticing the effect upon the pulse, and stopping when this begins to improve.

Salt solution is used because plain water has an injurious effect upon the blood, destroying the red blood corpuscles. This method has been tried sufficiently to guarantee its success, and I have seen it used in one case with good results. The necessary apparatus should be a part of the armamentarium of every hospital and surgeon. The method is simple and easy of application.

Surgical shock is now considered to be due to anemia of the brain, the result of a paralysis of the vasomotor center in the medulla oblongata, produced reflexly by a contusion or violent disturbance of the sensory nerves This vasomotor paralysis causes a collateral hyperemia, the blood being unequally distributed. The arterial system is less full, the veins, especially the abdominal veins, are engorged, the lungs and brain anemic. Any treatment to relieve shock must, therefore, be along the lines of combating cerebral anemia.

There are thus two indications in the treatment of shock: (1) To cause contraction of the arterioles and so diminish the space to be filled by a given amount of blood. (2) To cause an increase in the volume of blood to fill the given space. We meet the first indication by the use of stimulants, as strychnine, ether, etc.; but the shock might be too profound to allow the system to respond, so it is better to try and increase the volume of blood. In severe cases we do this by injecting salt solution directly into a vein, or, if the case is not so urgent, subcutaneously or by the rectum, and in abdominal section by filling the abdomen.

It is now the routine practice of many operators to use salt solution after every operation when shock is feared; some inject subcutaneously, others by the rectum. I have practised both these methods for the last three years with good success. Dawbarn recommends intravenous injection before any operation which is likely to be prolonged or severe, or when the patient is not likely to stand the anesthetic very well.

Submammary infusions of normal salt solution in cases of puerperal septicemia and other severe infections, are being used with good success in Johns-Hopkins Hospital. Dr. Clark, of Baltimore, reports a case of severe puerperal septicemia, in which a quart of saline solution was injected daily for seven days, a marked improvement in the pulse being noted after each injection. The patient felt more comfortable after the first injection; she began to improve at once and finally recovered.

Experiments are being carried on in Europe in the treatment of puerperal eclampsia with saline injections. Bleeding in this affection is recommended by a great many, but the amount of blood lost should be immediately replaced by means of the normal salt solution. There certainly can be no form of toxemia in which washing the blood is so clearly indicated as in this.

In Paris such good results have followed the intravenous saline injections in cholera, that they were encouraged to try them in dysentery. Considering the pathological physiology of these injections, the authors state that they dilute the blood, which has a tendency to become thick; that they act energetically upon the emunctories, particularly on the kidneys, by direct action on the renal epithelium, and by raising the lowered blood pressure. Aside from these effects, they have a general stimulating action.

Whatever may be the mode of action of these injections, the authors deduce the following conclusions:

1. Large intravenous injections (30 to 40 ozs.) of normal saline solution constitute an energetic treatment in grave dysentery.

2. These injections should be made in the early stage of the disease, and should be repeated, in order to lead to the development of a sustained general reaction, and a modification of the local condition.

3. There are no contraindications to the employment of these injections in dysentery, but caution should be exercised concerning the quantity and the rapidity with which they are administered, as too large an injection is dangerous in these cases.

It is probably in counteracting the effects of hemorrhage that we see the best results from saline injections. No matter what the origin of the hemorrhage, whether due to accident or during operations, or following parturition. Here the ready use of saline solution will often save a case which seems hopeless. The solution acts by stimulating the heart directly, increasing the volume of blood and thus giving the heart something to contract on. I have had considerable experience in this branch of the subject, and am sure I have saved a few lives. I could give the histories of a number of cases, of my own and others, to show the good effects of this treatment; but you have all had more or less experience in this branch of the subject.

Some authors recommend arterial infusion rather than venous. They claim that it is less dangerous; that if any foreign matter should be introduced, it would be stopped in the capillaries of the extremities and not in the lungs. I have tried the arterial method, injecting into the femoral; the venous is far the easier, and the danger of introducing any foreign substance is small.

For rectal injection an ordinary fountain or bulb syringe can be used. For the subcutaneous method a fountain syringe and a large hypodermic needle are required. The injections are generally made in the mammary, abdominal, or gluteal region. They are painless, and if done aseptically no ill results should follow. For the intravenous method it is well to have a graduated glass jar or reservoir, of a capacity of one quart or more, and attached to this a piece of rubber tubing, with either a sharp or blunt pointed needle. The operation is very simple. I generally select one of the superficial veins at the bend of the elbow; after exposing the vein I pass beneath it a double ligature; I then tie off the vein, next make a slit in it about one-half inch above the ligature, and let a few drops of blood escape, then start the solution, and while it is flowing introduce the needle, then tie the remaining ligature with a single knot; this approximates the vein about the needle and prevents any return flow or the sucking in of air. It is best to inject slowly, all the time noting the effect on the pulse. When the needle is withdrawn, the ligature is tied and the wound dressed.

Central Bank Building.

CASES OF ANGINA SINE DOLORE, DUE TO DISEASES OF THE RIGHT VENTRICLE.

By Wm. Watt Kerr, M.A., M.D., C.M., Professor of Clinical Medicine, University of California.

Read before the California Academy of Medicine.

Possibly it has been your experience to have some one complain of pain or uneasiness in the precordia, to have examined him carefully, but failed to find anything that would indicate the slightest trouble with the heart, and, consequently, to have regarded the case as a trifling neurosis, but subsequently to have been shocked by the news of the patient's sudden death. Or it may have been that the distress and anxious expression of the patient were so evident as to make the gravity of the case apparent, but that the physical signs were so conspicuous by their absence as to baffle every attempt to arrive at a proper estimation of the exact nature of the malady. Such, at least, has been my own experience in some of the cases which, with your permission, are now reported to the Academy.

CASE I.—A mechanic, 24 years of age, rather under the average weight, of good habits, complained of pain about the precordia. The family physician failed to find any sign of heart disease and attributed the discomfort to strain caused by playing upon the cornet. He therefore forbade the use of the instrument, and prescribed a tonic treatment, under which he improved for several months; but the distress recurred, and on one occasion he had an attack which his friends said was "something like a fainting fit," but that he asked for fresh air and appeared to be perfectly conscious. When I saw him soon afterwards he appeared to be in his usual health. About thirty-six hours later, while eating supper, he experienced another seizure, which he at once realized to be fatal, and in little more than thirty minutes he died, after showing signs of a gradually increasing heart failure. I was not present at the autopsy, but the family physician told me that there was marked fatty degeneration of the right ventricle.

CASE II.—A lawyer, 40 years of age, was suffering from intermittent fever, which had lasted for several months, and also from an acute orchitis. It was nearly five weeks before he was well enough to be pronounced convalescent. In the hope that it would hasten his recovery, he decided to take a trip East, but, before leaving, he called at my office and asked me to examine his heart, as he had a feeling of oppression over his chest, and a constant desire to take a long inspiration. Careful examination of the pulse and chest failed to reveal any signs of disease, and the patient was dismissed with the assurance that it was simply a temporary weakness resulting from his long illness. Next morning I was surprised to learn that he had been found dead in bed. The coroner's autopsy showed the left ventricle to be healthy in every respect; but through the entire thickness of the wall of the right ventricle there was a band of fat nearly one inch in width, and in the cavity of the ventricle there were two white clots, one lozenge-shaped, measuring about one by one and a half inches, and a second, about seven inches long and as thick as a lead pencil, extending from the ventricle into the pulmonary artery. Evidently the streak of fat in the ventricular wall had prevented a complete systole, so that the ventricle never was perfectly emptied, and the clots were permitted to form during his prolonged rest in the recumbent position.

Case III.—A merchant, 63 years of age, suffered from precordial anxiety and slight attacks of dyspnea. The pulse was good and the area of cardiac dulness normal, but there was a slight musical intonation of the second sound in the aortic area, so that, instead of the usual "lubb tup," we heard "lubb toomp." There was also slight edema of the feet. The autopsy showed that the left ventricle was healthy, but that there was considerable fatty degeneration of the right ventricle and atheroma at the base of the aorta.

Case IV.—Another case very similar to the preceding was seen in consultation with Dr. Henry Gibbons, and an autopsy showed the same degenerative changes.

Case V.—A gentleman, 53 years of age, had been subject to severe attacks of angina pectoris for some years. When first he began to suffer from cardiac disturbance there was not any pain, but simply a sudden dyspnea that attacked him whenever he attempted to walk quickly, and compelled him to stand still for a few moments, after which he could resume his walk at the usual rate without experiencing any discomfort. The only changes found at an examination a few weeks before his death were enlargement of the area of cardiac dulness to the right side, and a musical intonation of the second sound in the aortic area. The good quality of the pulse, even during the seizures, was a matter of common remark among different medical men who had seen him. During the last few months of his life the attacks became very frequent, not one day passing without three or four seizures. The diagnosis made was atheroma of the base of the aorta, with extension of the process to the branches of the coronary artery supplying the right ventricle, and resulting in degeneration of the wall of the right side of the heart. An autopsy could not be obtained.

It will be noticed that four of the patients mentioned never suffered from pain, and hence it may be objected that the symptoms are only those of fatty heart, and should not be designated angina. The intense pain, which is usually a prominent feature in attacks of angina pectoris, has distracted our attention from the sensation of suffocation or strangulation which the term "angina" was originally intended to describe, and which it etymologically means; but, since habit has so inseparably associated in our minds the coëxistence of angina and pain, it avoids confusion when we refer to such cases as have just been mentioned as examples of painless angina, or angina *sine dolore*.

The type of breathlessness met under such circumstances is altogether different from simple cardiac dyspnea; it is a suffocative paroxysm that most frequently follows exertion or emotion, but which may occur without any evident cause. It is not asthmatic in character, as the air enters the lungs freely, and there is no sign of obstruction in the chest; it is simply a paroxysm of air hunger, which the patient tries to satisfy by quick, deep inspirations. Instead of the quick, forcible inspiration with prolonged expiration that is distinctive of asthma, we have a forcible inspiration with a quick and frequently a gasping expiration. The attack is not unlike the gasping restlessness which is present in some cases of *post-partum* hemorrhage; and the symptoms are readily recognized as those of imperfect systole of the right ventricle, with diminished flow of blood into the pulmonary circulation, and a consequent demand of the tissues for oxygen. It has not been my experience to find any increase in the tension of the radial pulse during attacks of painless angina; on the contrary, the pulse was rapid and rather feeble. I am not prepared to say that such symptoms are pathognomonic of degeneration of the right ventricle, but in all such cases that have come under my observation, and where an autopsy solved the diagnostic problem, fatty changes were found in the wall of the right ventricle; while in some others, in which an autopsy could not be obtained, or where the patient is still alive, physical signs of dilated right ventricle existed.

It is impossible to explain the absence of angina *sine dolore* in some cases of dilated or fatty heart, unless it be that sufficient healthy muscular fibres remain to produce a complete systole, or that the exciting causes, such as emotional disturbance and physical or mental strain, have not been out of proportion to the capabilities of the heart. That extensive degeneration may exist without the production of any symptoms to awaken the suspicion of heart disease is a well established fact; indeed, we frequently hear that some man, who never was supposed to be the victim of heart disturbance, has died suddenly after some strain or excitement, and that the autopsy has shown degeneration of the heart muscle. In a number of such cases inquiry will ascertain that death was ushered in by an attack of the peculiar form of dyspnea that has been described as angina *sine dolore*.

The presence of pain in some cases of angina and its absence in others is a matter that admits of considerable discussion. Such cases as those related in this paper would suggest the idea that angina *sine dolore* is a dyspnea due to sudden diminution in the supply of oxygen from arrest or imperfect systole of the right ventricle and consequent interference with the pulmonary circulation. My experience, however, is still too limited to permit a dogmatic assertion on this point, although it warrants the belief that such may be the true explanation.

The pain of angina, on the other hand, is a neurosis affecting the nerve supply of the heart in any of its branches, *i. e.*, in the cardiac plexus, the coronary plexus, or the terminations in the muscular substance; also, it is frequently associated with changes in the tissues that are liable to produce hyperesthesia of nerve fibres distributed in their vicinity, such as atheroma and dilatation of the aortic arch, atheroma in the coronary arteries, degenerative changes in the cardiac muscle. While it is true that in a very large number of patients who have suffered from painful angina the heart is found to be degenerated, or the aorta and coronary vessels to have undergone atheromatous changes, nevertheless these conditions cannot be regarded as the cause of the pain, since they are very frequently found where symptoms of angina never existed. Neither can we regard the pain simply as a sequence of high blood pressure, although the speedy relief that follows dilatation of the arterioles shows that there is some relation between the two, because we know that high blood pressure may exist for an indefinite period, as in cases of Bright's disease, without the patient suffering any cardiac distress.

Possibly it is somewhat of the following nature: The cardiac nerves on an atheromatous aorta, or coronary artery, or in the vicinity of degenerating cardiac muscular fibres, are hyperesthetic, as is the case with sensory nerves in all other tissues which are the subject of inflammation. When, as a result of mental or physical strain, a rise in blood pressure takes place, the terminal branches of the coronary arteries contract with the other vessels, but probably to a much greater degree on account of the hyperesthetic condition of the nerves, so that a profound anemia of the cardiac muscle results with its accompanying pain. That anemia of a part will cause pain can easily be demonstrated by such a simple experiment as the application of a tourniquet to a large vessel. When the blood pressure is lowered by such agents as nitrite of amyl, the spasm of the coronary arteries is relaxed and the anemia of the cardiac muscle relieved.

There are many features relative to the distribution of angina pain which are of great interest, but they are not germane to the subject matter of this paper, and are enveloped in a mystery that can be dispelled only after closer clinical and pathological observation, aided by a more perfect physiological knowledge regarding the nerve supply of the heart.

The foregoing theory and series of cases would therefore suggest that the difference between the pathology of painless and painful angina is that the former is due to imperfect systole of the right ventricle, while the latter is the result of spasmodic anemia of either ventricle. It is a fact that in painful angina the morbid changes are more frequently found on the left side, but this happens because all primary changes are more common on the left side than on the right. and also for the reason that the systemic circulation is continually subjected to influences which increase the strain upon the left ventricle and thereby act as the exciting cause for an attack of angina. Furthermore, whilst imperfect systole of the right ventricle results in deficent oxygenation, or air-hunger, a similar affection of the left side tends to syncope.

The last case reported commenced as a painless angina and gradually developed into the painful type. The only two morbid physical signs that could be detected, after the case had continued for some years, were increased dulness to the right side, and musical intonation of the second sound in the aortic area. The possible explanation of this case is that the atheromatous process began in the branches of the posterior coronary artery supplying the greater portion of the right ventricle and interfered with the nutrition of the muscular wall, so that, upon exertion, the pulmonary circulation was inadequate and painless angina occurred. In course of time the ventricle dilated and the atheromatous changes progressed, the arch of the aorta becoming involved, as evidenced by the altered second sound. The diseased aorta increased the irritability of the cardiac plexus, lying upon it, so that any strain was followed by spasm of the coronary arteries and consequent angina pain. As each coronary artery is distributed to both ventricles, the injurious effect that these spasms would have upon the already degenerated right ventricle can be readily imagined. It was unfortunate that an autopsy could not be obtained in this case as I desired to present only those in which the morbid anatomical changes had been demonstrated, but I have reported it as a clinical illustration of the fact that painless attacks may ultimately assume a painful character, and, also, as a proof that absence of pain does not imply a trivial lesion.

Angina *sine dolore* is much more common than one would suppose it to be from the infrequency with which it is mentioned: but, in all probability, the disease is not always recognized, and the patient's sufferings are attributed to hysteria or to some reflex disturbance. When the symptoms are accompanied by a dilated right heart or distinctly atheromatous changes the diagnosis is easy, but when physical signs are absent it is difficult to arrive at an absolute opinion. If, when free from the paroxysms, the patient continuously suffers from a feeling of weight or distress over the precordia, and has a tendency to take occasional deep inspirations, there is a strong probability that the right ventricle is affected; and this amounts to certainty if the symptoms are invariably produced or aggravated by exertion.

Since muscular degeneration is, in many cases, progressive and incurable, the prognosis in these cases must always be grave, and in a large number of them absolutely bad; but, on the other hand, an effort should always be made to arrest the degenerative process and bring about a healthier condition of the cardiac muscle. A prolonged treatment, based upon dietetic principles, rest, followed by graduated exercise, together with the judicious use of cardiac and systemic tonics, will often restore a debilitated cardiac muscle. Much better results would be obtained in the treatment of degenerated hearts if physicians and patients would have sufficient pertinacity of purpose to make them adhere to one line of curative treatment throughout a long period of time, instead of resorting to a series of palliative measures, which are as conducive to the actual welfare of the patient as is a coat of paint to the safety of a rotting ship. The complete recoveries that take place in hearts which have become degenerated during fevers, such as typhoid and small-pox, should remove the hopeless aspect with which the treatment of such diseases too frequently appear to be clouded.

The treatment must include the directions that are generally given in all cases of weak heart, such as avoidance of excitement, mental or physical strain, and indiscretions in diet. When the exhaustion is great, rest, followed by massage with movements against resistance, and afterwards by graduated exercise, will do much to restore muscular tone. It is a mistake to advise patients with heart disease to lead a perfectly sedentary life; exercise, so long as it is not accompanied by decided effort or discomfort to the patient, is much more beneficial and should constitute the most prominent feature in the management of the case.

Arsenic in small doses, continued over a length of time, will give better results than any other medicine. It relieves the distress and increases the strength of the heart. In some cases the combined use of arsenic and digitalis, or of arsenic and strophanthus, will be necessary, but the Fowler's solution should be maintained after the other remedies have been discontinued, The addition of one-sixteenth of a grain of morphine to each dose of arsenic will assist in allaying the sensation of oppression and in counteracting any irritative action of the bowels. When the administration of arsenic has to be interrupted the best substitute will be found to be iodide of potash with digitalis. Since angina *sine dolore* is due to cardiac weakness and is not associated with arterial spasm, little or no relief is obtained from nitrite of amyl or nitroglycerin.

1200 Van Ness avenue.

DEPARTMENTS.

OBSTETRICS, GYNECOLOGY AND PEDIATRICS.

By WALLACE A. BRIGGS, M.D., Sacramento, Cal., and
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Vicarious Menstruation after Hysterectomy.—MARSI (*La Gynécologie*), states that total hysterectomy was performed on a young woman in August, 1896. Ever since she observes that the urine becomes bloody at intervals precisely corresponding to former monthly periods. Between the times of appearance of blood the urine is absolutely normal, and at no time is there any evidence of disease of the urinary tract.—*British Medical Journal.*

Professor Schenck's Researches on the Predetermination of Sex.—As the investigations of PROFESSOR SCHENCK as to the power of artificially determining the sex of offspring have aroused so much curiosity and interest, we have abstracted from the *British Medical Journal* a statement of the argument on which his conclusions are based. The pamphlet[1] opens with the statement that it is impossible to command natural processes, but possible by scientific means to exercise a more or less effectual influence upon them, in order to extract from them the best possible results. In the development of an embryo the generative organs are at first indifferent—hermaphrodite; in the further process of growth one set develops while the other atrophies. This tendency must be predetermined from the time of fertilization, for each cell formed from the ovum must have sexual characters, since these are not confined to the generative organs, but appertain to the whole body. The readiness with which an ovum can be fertilized depends upon its position in the ovary, the thickness of its envelop, etc., and these may also have a bearing on the question of sex. In other words, the predetermination may precede fertilization, and of this confirmation is found in the development of bees and in the production of male and female flowers by plants under different nutritive conditions. It is pointed out that the male sex preponderates to a definite though slight degree in the total number of births, and that the sex of a child is more likely to be that of its older parent. Particular attention is paid to the theory of crossed sexual heredity, by which each sex tends to propagate the other. Thus, if the sexual power of the male be greater a female offspring is more likely to result, and *vice versa.* With regard to the influence of environment upon sex, Robin's statement is quoted that in warm climates females preponderate; in cold and unfavorable, males. Born also showed that 95 per cent. of artificially fertilized frogs' eggs hatched out as females, this being an effect of nutritive conditions acting after fertilization. Thury found that cattle fertilized at the beginning of "heat" threw more females; at the end, more males. This he explained by the degree of ripeness of the ovum, but Professor Schenck accounts for it on the crossed-inheritance theory, the sexual power of the female being at its greatest at the end of the period of rut. This part of the work is summed up in the statement that the sex of offspring largely depends upon the state of nutrition of the parents, particularly that of the mother during pregnancy. During this period the difference between intake and excretion represents the food of the embryo, and hence requires special attention. The temperature is slightly raised, owing to oxidation processes, which entail a considerable consumption of red blood corpuscles aud consequent diminution of hemoglobin. It has been observed in domestic animals and in insects, that the better the mother is nourished the more females she produces, the number of males remaining practically constant. This influence upon the fetus *in utero* has received but little attention from the practical point of view, and Professor Schenck consequently set out upon a series of observations based on the theory of crossed sexual inheritance. He first investigated the excreta, and particularly the carbohydrates of the urine. The presence of a certain amount of sugar, which is commonly recognizable by the phenylhydrazin test in perfectly normal individuals, indicates incompleteness of the oxidation processes, whereby a certain quantity of heat is lost to the body. This physiological output of carbohydrate is in the male sex most marked during the period of growth—that is, between the ages of 14 and 19. In women there is no corresponding increase, but small quantities may appear in the urine before and after menstruation, while Iwanoff and others have shown that glycosuria is common in pregnant and parturient women. Now the amount of sugar normally excreted is equal in men and women, but more significant in the latter owing to the lesser activity of their metabolic processes. For the perfect ripening of the ovum it is necessary that oxidation shall be perfect—that is, that no sugar shall be left unburnt. When there is a remainder of unburnt sugar the ovum stands a chance of being less ripe, and less well nourished. Hence the properties of its protoplasm are less well developed, and by the theory of crossed inheritance it is more likely to produce a female child. On the other hand, when the urine is free from sugar the ovum can attain perfect development, and give rise to male offspring. It is upon this cardinal principle that Professor Schenck's theory is based. He holds that a prolonged course of appropriate nourishment, both before and after fertilization, will tend to the conception of male children only. The next question is of the means to be adopted to ensure this end. If a male child is desired, and the maternal urine contains no sugar, but abundance of reducing substances (particularly the levo-rotatory glycuronic acid) he allows impregnation forthwith. If, on the other hand, sugar is present, it must be removed, and the reducing substances increased before fecundation may take place. It is found that the urine of a woman pregnant with a boy contains more reducing substances than that of one with a girl. The diet recommended contains a large amount of proteid, which seems to be required by a male embryo. Finally Professor Schenck gives what may be called his clinical results. He quotes numerous cases to show that the bearing of female children is associated with glycosuria. In such instances he recommends a diet comprising plenty of proteid and fat, and as little carbohydrate as can be tolerated; this must be taken for two or three months before and three months after impregnation. He gives one example in which six boys were born in succession under this treatment, and a girl immediately it was relaxed; and others in which boys were born after repeated births of girls before the treatment. In all, out of seven recorded cases, six were successful. He concludes that the nutrition of the mother plays a most important part in the determination of sex, and that in countries where much flesh is consumed there is a marked preponderance of male children. This can be imitated artificially, but it is far more important to ensure the completeness of oxidation processes in the body.

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[1] *Einfluss auf das Geschlechtsverhältniss.* Von Dr. Leopold Schenck, Professor an der k. k. Universität und Vorstand des Institutes für Embryologie in Wien. Magdeburg: Schallehn & Wollbrück. 1898.

As long as the combustion of the food is perfect, and the urine is totally free from sugar, the exact amount of meat consumed is of secondary importance. The birth of male children can thus, in certain cases, be predetermined, but the voluntary production of girls is a problem as yet unsolved.—*Philadelphia Medical Journal.* [The foregoing has been selected because it furnishes a very succinct review of a theory that has been widely published. It has been heralded in the secular press as a new discovery in the scientific world supported by unmistakable facts. Much interest has, therefore, been excited amongst the laity, and it is well that the profession should have an intelligent *conception* of the subject. The following from the *Medical Record*, which is in our contemporary's best style, seems particularly apposite * * *]: If the reports to the daily press are to be credited, the long-promised and much-advertised book by Schenck, of Vienna, on the determination of sex, is a fake of the purest order. The book was published on April 28th. The entire question, in the opinion of Dr. Schenck, appears to be one of the varying proportions of albumin and of sugar in the organism of the mother, and therefore boys or girls may be turned on or off at will by simply regulating the amount of carbohydrates in the diet of the mother. It appears that an excess of sugar favors the female sex, so that science comes to the support of sentiment and we find that the sweet creatures have a physiological right to their appellation.

SURGERY AND ANATOMY.

By T W. Huntington, B.A., M.D., Surgeon Southern Pacific Company's Hospital, Sacramento, Cal., and

Geo. B. Somers, M.D., San Francisco, Cal.

Tenotomy in the Reduction of Fractures.—Dr. John B. Roberts says tenotomy as an aid in the reduction of fractures with displacement is not employed as often as it should be. Its adoption by every physician who knows how to perform an aseptic subcutaneous division of a tendon would result in lessening the number of cases of deformity after fractures, especially of the tibia and fibula. For instance, the ease with which reduction is effected after cutting the tendon of Achilles in tibial fracture, where there is overriding and deformity, is a source of much satisfaction. It is essential that the whole tendon be cut. If a few fibres are left undivided, the heel will still be drawn up by the calf muscles. This little operation does not appear to impair the subsequent power and usefulness of the foot. It obviates the necessity for complicated fracture appliances to overcome spasm of the calf muscles, which are causing pain and displacement of the ends of the broken bone —*Philadelphia Medical Journal*, March 5, 1898.

Radical Cure of Hernia in Infancy.—Froelich holds that in children under 2 years of age inguinal hernia will usually be cured by the use of a suitable truss. Beyond this age spontaneous cure is an exceptional event, and an operation for radical cure is therefore indicated. In early life, if a hernia increases in size in spite of the application of a good truss, an operation should be performed, however young the subject. The operation performed by Froelich consists in simple ligature of the neck of the sac, which is retained intact and without any dissection from the scrotal tissues, and in careful suture of the abdominal wall.—*American Practitioner and News*, February 15, 1898.

Hernia in Infancy and Childhood.—Operation should, I think, seldom be advised in children under the age of 4 years, because there are very few cases under this age which cannot be controlled by a truss, and, furthermore, mechanical treatment cannot be given a fair trial in a much shorter period than this. I believe it to be a good rule never to advise operation in children until a truss has been satisfactorily tried for a reasonable time—*e. g.*, one or two years without benefit There are, however, important exceptions to this rule: (1) In femoral hernia, operation may be at once advised, for the reason that the chances of cure by means of a truss are too slight to be considered. (2) Irreducible or adherent omentum (rare in children), and reducible hydrocele, may furnish sufficient reason for early operative interference (3). There are, furthermore, a number of cases, especially in dispensary practice, in which the rupture cannot be satisfactorily retained on account of insufficient care on the part of the parents.—COLEY in *Medical News*, December 18, 1897.

Fractional Sterilization.—DR SHERWOOD DUNN says one of the most thorough, and, consequently, safest modes of sterilizing gauze, instruments, etc, is the kind called fractional. It consists in raising the temperature in a steam sterilizer to 200° F. for twenty minutes, which will destroy all fully developed bacteria, then keeping the temperature at 95° to 100° F. for twenty-four hours, which develops the remaining spores into bacteria form, when they can be killed by twenty minutes' exposure again to 200° F. This repeated three times is almost certain to render the objects absolutely sterile—*Annals of Gynecology and Pediatry*, January, 1898.

Iodoform.—Heyn and Rossing have shown that iodoform is not a germicide. This conclusion has been confirmed by Ruyter, Lubbert and Tilanus. But this discovery has been robbed of its disastrous sequence by the experiments of Behring, of Bonn, who showed that the dangerous products of fermentation, the leucomaines and ptomaines, are acted upon by iodoform and destroyed by reduction. Its antiseptic value is increased in proportion as it becomes thoroughly wet, and it has been shown to have a positively destructive action upon tubercle.—DR. SHERWOOD DUNN in *Annals of Gynecology and Pediatry*, January, 1898

Preparation of Catgut.—Catgut is satisfactorily prepared by the formal process. The word "formal" is the proper contraction for the word "formalin" The word "formalin" is the trade term for a commercial preparation of a 40 per cent solution of formaldehyde gas in water. A 2 per cent. solution of this commercial formalin is what we mean when speaking of a 2 per cent. solution of formal. Catgut, raw, dirty and oily, is placed in a jar containing 2 per cent. of formal. The bulk of the water should be three or four times the bulk of the catgut The catgut remains in this solution for forty-eight hours, and by the end of that time it has become hardened and sterile. It can then be boiled in water without suffering damage if the formal is removed. Formal is irritating to the tissues, and it destroys catgut unless it is removed. Wash out the formal by putting the catgut in a bowl. Attach a rubber tube to the faucet and drop one end of the tube in the bottom of the bowl, so that water escapes upward through the mass of the catgut Let the water run for twelve hours. Then boil the catgut for fifteen minutes Put the boiled catgut in absolute alcohol and use it directly from the alcohol at the time of operation—NORRIS in *New England Medical Monthly*.

Rubber Gloves in Operative Surgery.—In an article by DR. CHARLES MCBURNEY the use of gloves is discussed. He states that in preparing for an operation all unimportant minutiæ should be discarded, but that the attention should be directed to those details which actually determine the invasion or exclusion of wound infection. Heat is the most reliable of all disinfectants. The usual source of infection is to be sought either in the skin of the patient or in the hands of those directly concerned in the operation. Dr. McBurney believes that it is impossible to render the hands perfectly sterile, largely because we cannot use the most efficient sterilizing agent—wet heat. But if we cannot boil the hands we can cover them with something that has been boiled. He has accordingly tried the use of thin rubber gloves. The results have been very satisfactory. The gloves are boiled, and thus rendered sterile. Further, they are non-absorbent, and remain sterile if they come in contact with no source of infection. Dr. McBurney merely washes the hands with soap and water, while Dr. Halsted says that the gloves are first boiled (at the Johns Hopkins Hospital) and then dropped into corrosive sublimate solution (1:1000), filled with this solution and pulled, while full, on hands as carefully disinfected as if no gloves were to be worn. The hands are thus protected against infection in the most septic cases, and his hands do not suffer from prolonged immersion in solutions. When first used it is difficult to use some instruments rapidly, such as needles, thread, etc., and there is some risk of tearing the gloves, but in a short time one becomes accustomed to them and the tactile sense is in no way interfered with. To prepare gloves for use they are washed with soap and hot water, to which a little ammonia has been added. They are then washed a second time in fresh ammonia water, lightly packed with gauze, wrapped in a towel and boiled for fifteen minutes in a 1 per cent. solution of sodium carbonate. The enveloping towel is to be removed only by the operator or assistant at the moment when the gloves are to be drawn on. The hands of all directly concerned in the operation are washed with soap and water and dried, the interior of the gloves is dusted with sterile starch powder, and the gloves (a fresh pair for every operation) are drawn on —*National Medical Review*, May, 1898.

OPHTHALMOLOGY, OTOLOGY AND LARYNGOLOGY.

By Wm. Ellery Briggs, M.D., Sacramento, Cal.

Alcoholic Amaurosis Resulting from Wood-Alcohol Poisoning.—Drs. C. MacCoy and F. M. Michael report a case of blindness from two doses of wood-alcohol. A man, æt. 21 years, drank about 60 c.cm. with sugar and water, and repeated the dose in about two hours. The patient slept profoundly for ten hours. Twenty-four hours after taking the alcohol he complained of loss of sight, and, upon examination, mydriasis of both eyes was found with no reaction to light or accommodation; vision in both eyes totally gone; double optic neuritis, with congestion of retina, was present. For several days the amaurosis remained complete, while the general symptoms were improving under treatment with olive oil, glonoin, potassium iodide, and leeches On the eighth day the patient complained of hallucinations. Owing to the fact that the patient had in past years shown symptoms of specific disease, the doses of iodide of potash were increased as soon as the severe gastro-enteric symptoms disappeared. On the fourteenth day the patient had faint perception of light. The disc outlines were becoming daily slightly more clear, and one-fiftieth of a grain of sulphate of strychnine was also given three times daily. Three weeks from the poisoning he was able to count fingers a few inches distant. Eserine drops were used to counteract the mydriasis. Two and one-half months after taking the wood-alcohol he could count fingers with right eye at six inches, and perceive light with the left. There was total mydriasis without pupillary reaction, media clear. There was atrophy of the optic nerves, with cupping of the discs, the right disc having the appearance of glaucomatous excavation. The eyes have continued unchanged up to the present time.—*Medical Record*, May 28, 1898.

The Sterilization of Ophthalmic Instruments.—DR. DE SCHWEINITZ makes a useful suggestion in regard to the sterilization of ophthalmic instruments without blunting or tarnishing them. He finds that ten minutes' immersion in a 1:1000 formaldehyde solution is satisfactory; but he prefers the use of pure formaldehyde gas. The instruments are first washed and dried, and are then placed in a box in the bottom of which there is a dish of formaldehyde. A small piece of calcium chloride is placed in the dish and the close-fitting cover adjusted. In ten minutes the instruments are sterile; no harm is done by leaving them in the gas for an hour.—*Bristol Medico-Chirurgical Journal*, March, 1898.

Inequality of the Pupils Observed at an Alttitude of Ten Thousand Two Hundred and Fifty Feet.—DR. E. T. BOYD reports that inequality of the pupils (anisocoria) is very common among the otherwise healthy residents of Leadville, Colorado. The condition is noticed in the old and young, and in men and women. The author also found that physicians in other high altitudes in Colorado had noticed the same inequality in the size of the pupils of residents of those towns. One physician stated that he believed one-third of the population who had lived there for more than five years was affected with the peculiar phenomenon. Heretofore this condition has generally been considered to be a symptom of some pathological condition either of the eye or the nervous system. In 20 cases reported, the author found a negative history. All of the subjects are in excellent health. He rarely found anisometropia which may occasionally cause anisocoria. The pupils reacted concentrically, and responded normally to light; convergence and accommodation in all but two cases was normal. The departure consisted in a peculiar reaction first described by Gowers, as follows: "Immediately upon exposure to light the pupils contract; light stimulus being continued, the abnormally dilated pupils rapidly regain their former size." In all the cases that the author has seen frequently, the pupils have occasionally been of equal size. The difference in size has ranged from one-fourth to three-fourths times larger in dilated than the smaller pupil.—*Journal of the American Medical Association*, April 22, 1898.

Creasoted Oil for the Expulsion of Tracheal False Membranes and Intranasal Injections of Oil.—DR. WILLIAM EWART says that in all forms of diphtheria the injection of antitoxin should be our first care; and in the nasopharyngeal cases it often succeeds almost without aid. In the tracheal cases, however, it cannot be depended upon. Tracheotomy is powerless to clear the membrane away from the trachea and the bronchial tubes. In these cases the creasoted oil is of special value. The advantages to be gained from tracheotomy are lost by too long delay of the operation. Antitoxin accelerates the detachment of the membrane, and this will be the more readily expectorated if the child has not been exhausted by prolonged dyspnea; whilst the method now advocated, which has for its chief object to promote expectoration as well as the detachment of the membrane, cannot conveniently be applied except after a preliminary tracheotomy, but distinctly improves the prospect of that operation. The object of the creasoted oil treatment is: (1) To promote the expectoration of the membrane. (2) To assist its detachment. (3) To lessen infectiveness *in situ*. (4) To soothe the ulcerated mucous surface. Fifteen drops of a 1:20 solution are dropped in every two hours during the first two days, but after that once in four hours will suffice. The immediate effect of the creasoted oil is to set up cough, thus aiding the detachment of the membrane, but it does not cause the slightest distress to the patient. In intranasal diphtheria there is an advantage from the use of some antiseptic solution during and after the attack. A solution of carbolized oil—1:60—a small quantity of which is introduced into the nostril twice daily aids the healing process and reduces the danger from infection of other children. The medicated oil also is beneficial in other affections of the nostril, naso-pharynx, and sinuses. In case of continued pyrexia the drying and caking of secretion is a source of discomfort, causing the mouth to be held open. The application of the carbolated oil to the nasal cavity will relieve this condition. Nasal dryness and fetor from various causes are relieved by the application of a small quantity of carbolated oil. It is also useful in the catarrhal congestion after removal of nasal growths and in the dry condition of granular pharyngitis and bronchial catarrh.—*British Medical Journal*, May 28, 1898.

DERMATOLOGY, SYPHILIS AND VENEREAL DISEASES.

Error in Diagnosis between Chronic Syphilitic Fever and Tuberculosis.—At the meeting of the American Association of Physicians, Dr. E. G. Janeway, of New York, briefly reported a number of cases in which this error was made. One case was that of a young man who had been sent to a sanitorium for consumption. He continued to grow worse, came to him, and an examination revealed syphilis. No tuberculous symptoms could be found, and hepatitis had been the cause of his ill-health. The patient promptly recovered under treatment. In another case there was fever, sweating, and pain in the side; the patient also had been advised to go to the country on account of supposed tuberculosis of the right lung, but a later examination showed two ribs to be diseased, and a small sinus was apparent. Antisyphilitic treatment removed this trouble. The specialist might be able to recognize these cases, but it must be remembered that the majority of them fell into the hands of the general practitioner. In obscure cases of apparently tuberculous miliary sepsis, syphilis should always be borne in mind as the possible cause.

Dr. I. E. Atkinson, of Baltimore, said nothing showed more clearly the lack of accurate attention on the part of the medical profession than this very frequent presence of syphilis, complicating all sorts of obscure conditions. It should be looked for. This was especially true of the class of cases referred to. The disease might simulate continued fever, although fever might be remittent in character and thus cause suspicion. He referred to a sailor from Calcutta, who had an enlarged liver and a severe cough, but no tubercle bacilli could be found. Albumin and casts were both present. The man denied having syphilis; hepatic abscess was suspected and he was aspirated several times, without result. The plasmodium of malaria was looked for, but not found. The right testicle began to enlarge. Iodide of potassium was prescribed, and in three or four days he had no fever. He recovered entirely. It was in the late cases that the fever was apt to be obscure.—*Medical Record*.

When may the Subjects of Gonorrhea be Deemed Cured?—The *Journal des Practiciens* for April 16th regards this question as of the gravest importance, because the compulsory abstention from intercourse bears hard upon the patient, while its too early resumption is fraught with danger to the woman. It is commonly recommended to have recourse to the "reaction of Neisser," which consists in producing an artificial irritation of the urethra by injecting some drops of a solution of nitrate of silver, whereby a secretion is caused which may be examined for gonococci. For the same purpose, the drinking of beer, the passage of bougies, etc., are recommended. DR. DELEFOSSE condemns these measures as not only without value, but actually dangerous, by reason of the risk of producing cystitis, orchitis, etc. His method of procedure is as follows: Coitus is not permitted so long as there remain filaments in the urine in any number, or so long as the filaments are long and fall rapidly to the bottom of the vessel or contain gonococci, pus organisms, or even many pus cells. When the filaments are short, few in number, slight, and floating, he directs the patient to present himself early next morning without having urinated since night, and having thoroughly fatigued himself on the preceding day. Pressure is made *per rectum* on the prostate, then the finger is drawn exteriorly along the urethra for its entire length, pressing firmly. At the same time, if necessary, a bougie may be introduced to afford a point of resistance. He collects from the meatus the discharge so obtained and submits it to microscopical examination. Finally, the canal is scraped to a depth of two inches or two inches and a half from behind forward, and the scrapings are examined under the microscope. If these two examinations are negative he directs the patient to drink, during the following week, beer or champagne, to ride a bicycle, and to take long walks; then he makes another morning examination. If this proves negative, he sanctions coitus after a fortnight.—*New York Medical Journal.*

The Thermic Treatment of Gonorrhea.—DR. JAMES J. WALSH, writing from Berlin (*Therapeutic Gazette*), after discussing the German opinions on protargol and other silver remedies in gonorrhea, says: The most promising thing in the treatment of gonorrhea just now would seem to be Quincke's suggestion as to temperature. The gonococcus is extremely sensitive in cultures to even slight variations of temperature. Dogs with a constant temperature of 39° C. (102.2° F.) cannot be inoculated with gonorrhea, and Finger found that malarial and other patients with a temperature of 40° C. (104° F.) would not take it. Quincke puts a Leiter coil around the penis and keeps the temperature at 40° C. for 24 hours, and has got some very satisfactory results.—*New York Medical Journal.*

MATERIA MEDICA AND THERAPEUTICS.

By WM. WATT KERR, M.A., M.B., C.M., Professor of Clinical Medicine, University of California, San Francisco.

Antistreptococcic Serum.—In a paper to the *Lancet* upon the subject, DR. LOUIS COBBETT concludes as follows: "The serum has already been somewhat extensively used by medical practitioners, in some cases with apparently good results, in others without obvious effect. I do not intend to discuss the reports of these cases, for I think that it is very difficult to deduce the value of this treatment from the results of its application to human disease, for cases of streptococcal disease do not run any definite course. Who can say when the course of erysipelas will be stayed, or when in puerperal fever the temperature will suddenly fall? These things occur without regularity, and are apt to be put to the credit of any remedy which may have been used. Moreover, the rate of mortality of streptococcal diseases, or of any group of streptococcal diseases, is not known. The statistical method is, therefore, not applicable to the estimation of the worth of any remedy applied to them. We never know in any given case whether the disease is due to the streptococcus or to some other organism; and even if we could make sure of this it appears that it would still be necessary to decide what kind of streptococcus it was due to before the right serum could be applied. We can, therefore, hope to gain but little evidence of any value from the experimental use of the serum in cases of human disease. The value of the remedy must first be clearly determined by experiments on animals. Until it has been shown beyond the possibility of doubt that the serum will protect them from and cure them of artificial streptococcal infections, until the opinion of experimental observers is unanimous in its favor, it is not yet ready for the physician * * * It has been shown that even when the serum is most active it will not protect against all streptococci; that its power of protecting even against the kind of streptococcus used in the immunization of the animal which provided it does not approximate to the power of the antidiphtheria serum against the toxin of the diphtheria bacillus. Much, therefore, remains to be done before the serum can be used in cases of human disease. The possibility of an anti-streptococcic serum has been demonstrated, but the remedy is yet in its infancy. For its infancy the laboratory is its proper place." These are timely words, and in view of the present regrettable custom of using and advertising as remedies and cures various antitoxins whose worth has not been clearly proved are amply justified. Much harm, too, is done to the reputation of experimenters by their proneness to give to the world as authentic and reliable the results of their incomplete researches. Doubtless this is due to the fear that they may be forestalled, and thus miss the opportunity of immortalizing themselves as pioneers in scientific research. Nevertheless, the fact is undeniable that in the majority of cases it would be far better for themselves, the profession, and the general public, if they would be content to bide their time. As Dr. Cobbett goes on to say: "Already the medical world does not sufficiently discriminate between a remedy of astounding value, such as the antidiphtheric serum, and the hosts of other antiserums for syphilis, tubercle, cancer, etc., with the result that many practitioners still hesitate to use the former, regarding it merely as a fad of the day, and many lives are thus lost. The antistreptococcic serum cannot then be recommended in cases of human disease. In the meantime the physician may reasonably hope to obtain some day a specific remedy for these diseases, justified by the measure of success which the serum has already attained in the laboratory."—*Medical Record.*

Antistreptococcus Serum.—In a discussion of this form of treatment in New York last week, **Dr. Louis Fischer** stated that he had employed Marmorek's serum in one case of puerperal septicemia, and in eighteen other cases, most of which were scarlet fever. The only case which recovered, he believed would have done so without the serum. Severe, but readily controllable cardiac depression, was observed in connection with the treatment. He believes the general use of Marmorek's serum should be prohibited until careful study had afforded a better knowledge of its therapeutic value. **Dr. W. H. Park**, speaking from the view-point of the bacteriological laboratory, insists that properly prepared and fresh streptococcus serum is certainly capable of protecting rabbits from septicemia. The fact should not be lost sight of that the streptococcus serum cannot be expected to act beneficially except in cases in which the inflammatory process is really the result of streptococcus infection. The experience at the board of health laboratory made it certain that a great variety of streptococci were influenced by the serum. DR. EDWIN ROSENTHAL, of Philadelphia, who participated in the discussion, stated that the streptococcus serum was given in scarlet fever and diphtheria only with the object of influencing the results of streptococcus infection. He would use the serum only in scarlet fever, puerperal fever and erysipelas.—*Philadelphia Medical Journal.*

Streptococcus Serum and Hematuria.—DR. WILLIAM H. THOMSON, of New York, has employed the antistreptococcus serum in one case of chronic ulcerative endocarditis, and has observed hematuria and suppression of urine in connection with the treatment. The patient had a temperature of 105° F., and frequent rigors. As the urgent symptoms did not seem to be affected by the serum, the latter was pushed until the man received in the course of seventy-two hours nine injections, and a total quantity of 145 c.cm. of the streptococcus serum. On the second day, the urine was diminished and was distinctly bloody. On the third day, there was suppression of urine, which yielded to hot saline irrigations by the rectum. The improvement was, however, only temporary, the patient gradually passing into coma, and dying in this condition. To ascertain the connection between the urinary symptoms and the serum treatment, some experiments were conducted upon animals in the physiological laboratory of the College of Physicians and Surgeons. They showed that when 20 c cm. of streptococcus serum (freshly prepared in the health department laboratory) were injected, there was a fall in the blood pressure of the kidney, and that when 40 c.cm were used, hematuria and hemoglobinuria occurred, preceded by albuminuria, and followed by suppression of urine. When the serum was used in smaller and divided doses, only albuminuria resulted.—*Philadelphia Medical Journal.*

MEDICINE AND PATHOLOGY.

By ALBERT ABRAMS, M.D., Professor of Pathology, Cooper Medical College, San Francisco.

The Differentiation of Typhoid and Coli Bacilli.—The following by HALLOCK PARK, M.D., of New York, appears in the *British Medical Journal* of December 18, 1897. "Before speaking of the methods of isolating and identifying the typhoid bacilli from stools, urine, etc., I want to touch on a few points concerning Widal's reaction. In New York we have found a bouillon culture of moderately virulent typhoid bacilli of 18 to 20 hours' growth at 35° C. to be preferable to suspensions from agar cultures for making the examinations. The specimens for examination are sent either as dried blood on glass slides or as blister serum in small tubes. The first has the advantage of being quickly obtained, the latter of permitting more accurate work in dilutions. The blister fluid is obtained by means of cantharides plaster, and this proved to be very satisfactory. We depend upon the reaction which occurs during the first fifteen minutes after the mingling of the serum and bacilli. A marked reaction occurring in a 1 to 10 dilution of blood or serum we consider to indicate a probable typhoid infection, a marked immediate reaction in a 1 to 20 dilution as indicating a positive infection. The absence of reaction in any single examination we consider to be of little diagnostic value. We have met with cases where typhoid infection was certain, but where, clinically speaking, typhoid fever did not exist, namely, typhoid abscesses in liver, kidney, etc. We have recently been greatly interested in trying to obtain the typhoid bacilli from stools, urine, etc., by a new method devised by DR. P. H. HISS. By means of this method the typhoid bacillus has been distinguished from all other bacteria through the appearances of the plate and tube media; so that it can be readily detected and isolated in the stools and urine of typhoid patients. After the first week the typhoid bacilli have been obtained on the first examination in about 50 per cent. of the cases.—*Medical Review of Reviews*, February 25, 1898.

The Latest Facts about Phagocytosis.—After the investigations of BUCHNER had proved beyond a doubt that both blood and blood serum possess the power to destroy bacteria, the question of the exact nature and the origin of the substance to which the blood owed this attribute was still an open one. BUCHNER, HAHN, and DENYS assumed the existence of an albuminous substance which they called "alexin." This they thought came from the polyneuclear leucocytes, and believed that in it lay the bactericidal power of the blood. This theory enhanced the importance of the blood-serum and the lymph, and was apparently in sharp contrast to that of METCHNIKOFF, who asserted that the leucocytes took the bacteria into their protoplasm, swallowed them, as it were, and digested them, thus protecting the body from their pernicious influence. When it came to be recognized that alexin might come from the leucocytes, the opposition to this phagocytic theory was not so pronounced as formerly. For it was easy to suppose that the bactericidal substance which was derived from a leucocyte might be active while yet in the body of the cell. On the other hand, it is equally supposable that alexin may be produced only outside the body of the leucocyte—perhaps by its death. This question is not yet satisfactorily settled. LOWIT, by tying the aorta, was able to reduce the number of leucocytes in the blood circulating through the head and lungs. He found that when their number was less than 800 per cubic millimeter the bactericidal power of the blood was greatly reduced, or even absent As the polyneuclear leucocytes disappeared more rapidly he concluded that they are especially potent in bactericidal power.—*Medical News*, March 5, 1898

Pneumonia.—W. H. THOMSON and HENRY L. ELSNER recognize that of late years, lobar pneumonia often fails to show the definite course commonly ascribed to it. The latter presents some interesting deductions based upon careful consideration of 150 cases. In many of these, unusual features presented during the course of the disease, frequently making a positive diagnosis impossible. In 80 per cent. of the cases, the characteristic chill and fever and all of the other usual symptoms followed each other in regular order, the disease running a typical course within from 6 to 11 days. In the other 20 per cent. vagaries showed themselves. In the pneumonia occurring in alcoholics, in aged and enfeebled subjects, and in most of the severe forms occurring in children, the initial chill was observed to be commonly absent. Cases of pneumonia characterized by absence of chill, as a rule, runs a protracted course. J. W. MOORE (*British Medical Journal*) adduces evidence sustaining the view, that the microörganisms peculiar to erysipelas, to influenza, to tuberculosis, and to enteric fever, may one and all give rise to a specific pneumonia or pneumonic fever. The teaching of LEVY (*Archiv. f. Exp. Path.*), that streptococcus pyogenes is an excitor at once of suppuration and of erysipelas, is now generally accepted. If we admit the identity of the pus-producing streptococcus with that of erysipelas, we at once obtain a key to the occurrence of an acute pneumonia in erysipelas; for this very bacterium—the streptococcus pyogenes—plays a part that is second to none in the production of influenza-pneumonia. The pneumonia of influenza, while producing the ordinary physical signs of acute croupous pneumonia, is often latent in its course or accompanied by a profuse muco-purulent expectoration, with scarcely any rusty sputa. The ebbing of the strength in some of these cases in elderly people is often absolutely beyond control. Cultivation experiments by **RIBBERT** (*Deutsch. med. Woch.*) with the tracheal mucus, the lung tissue, the spleen, and the kidneys—revealed, in 5 out of 8 cases, the streptococcus pyogenes or else the streptococcus erysipelatosus (which has been shown to be identical with the former), the presence of which could be demonstrated in the sputum also of influenza patients. His investigations, on the whole, evidenced that, in all cases in which microörganisms were at all capable of demonstration, the streptococcus pyogenes was to be found Only once was there in addition a coccus which bore marked resemblance to the diplococcus pneumoniæ, and probably represented a modification of the same. According to **OSLER** (*American Journal of Medical Sciences*), toxemia is the most common cause of death. Symptoms may develop early and cause, from the outset, severe cerebral symptoms. The toxemia may be severe and fatal even with consolidation of only one-half a lobe, being, in reality, due to the action of the specific toxins on the heart-centers rather than on the muscular substance of the organ itself. The author contends that the toxemia outweighs all other elements in the prognosis of pneumonia. **OSLER** (*American Journal of Medical Sciences*) considers the general death rate for pneumonia to be 20 to 30 per cent. Above the age of 60 the mortality is from 50 to 80 per cent., while young people are prone to recover. The same is the case in robust healthy adults; for instance, the death-rate in the German army in over 40,000 cases was only 3.6 per cent. General debility, poor food, and alcoholism greatly increase the danger. **WEISMAYER** (*Zeitsch. f. klin. Med.*) finds that examination of the sputum in cases of pneumonia is of practical importance. The prognosis is, in general, more unfavorable when streptococci are found; it increases the length of the illness and adds to the danger of abscess-formation and of secondary infection by tubercle bacilli. The practical deduction from both clinical and bacteriological observations of the facts of pneumonia emphasizes anew, according to W. H. **THOMSON** (*New York Medical Journal*), the utter futility of treating diseases according to their names. From many clinicians we hear that it is doubtful whether the treatment of pneumonia is any more successful now than it was thirty years ago. This doubt he fully shares; but one reason may be that pneumonia is too much regarded as pneumonia and nothing else, instead of being an infectious disease which produces very differing effects in those attacked according to very varying conditions in the infection. Moreover, at the very outset, it is unsatisfactory to treat a case of poisoning by dealing with its effects or symptoms instead of aiming to neutralize the poison itself. Time alone will show whether an antitoxin can be furnished to the profession, as it is from this quarter only, he believes, that any real improvement in the treatment of pneumonia can be expected. Until then we are left only to dealing with indications. The treatment of 11 cases, all of which recovered, was, first, to lessen the vascular excitement of the early stages—*i. e.*, for the first day or so—by aconite and sweet spirit of nitrous ether. As to the high temperature, he did not feel solicitous if it failed to rise above 106° F., considering the pyrexia rather beneficial than otherwise. His chief task, as will be seen by the records, was to deal with the threatened heart-failure; this danger, in a number of them, continuing for such long periods. Besides peptonized food, his chief medical recourse was to a prescription of equal parts of the tinctures of nux vomica, digitalis, and strophanthus, of which 25 to 30 drops were given every three hours. The most striking effect, however, was noted from doses of 7 to 10 grains of camphor, given hypodermically, dissolved in sterilized olive oil. **BURUCH** (*Medical News*) highly recommends baths for children and wet compresses for adults. For children the bath is administered alongside the bed, as in typhoid fever. Beginning with 95° F., each bath may be reduced a few degrees until the patient becomes accustomed to it, repeating every four hours until the temperature remains below 102.5° F. The bath-temperature should rarely be below 85° F., the patient should remain in it from eight to ten minutes, and friction after the bath is required to prevent chilling. For adults the wet compress, wrung out of water at 60° F., is wrapped around the chest and covered with flannel. It should be changed every half hour if the patient's temperature is over 102.5° F.; every hour if the temperature is below this. It should be discontinued when the temperature falls to 99.5° F.—*Monthly Cyclopedia of Practical Medicine*, March, 1898.

Recent Progress with the Roentgen Rays in Internal Medicine.—The progress made with the rays has not been limited to surgery. In clinical medicine the rays are not without diagnostic value, especially in thoracic diseases; in fact, one may affirm, without exaggeration, that they supplant in many conditions, when accuracy is a desideratum, the conventional signs of diagnosis. In adults, the abdomen is still a *terra incognita*. In children, however, radiography of the abdomen is of great importance. This fact refers not only to the solid viscera, but to the stomach and intestines. When a differentiation by the Roentgen rays is attainable, many of the difficulties which now oppose us in the radioscopy and radiography of the soft parts, may be eliminated. Radioscopy of the lungs is extremely easy, and in some individuals, especially children, the bronchial tree may be defined in its entirety. The heart, the diseased aorta, and diaphragmatic movements can be seen by a mere tyro. Pleural effusions and gross changes in the pleura may be elicited. Calculi in the gall and urinary bladder, and in the kidneys have been detected in the living adult. The use of the Roentgen rays as an early diagnostic method in the localization of tuberculous lung lesions is invaluable. **E. GRUMMACH** (*Therapeutische Monatshefte*) demonstrates the importance of the rays from the standpoint of the internist. He reports instances of tracheal stenoses, lung tumors, and increase in the area of the lung borders determined by this method. Any increase in the area of the heart can also be determined and this fact is especially valuable in those cases like emphysema, where the method of percussion is faulty. Irregularity of the heart action can be recognized by radioscopy and in controlling the action of digitalis, the fluoroscope gives better results than other methods. **THOMSON** (*Lancet*, September 18, 1897) reports 3 cases of thoracic aortic aneurism and 1 case of neoplasm of the left side of the thorax with dislocation of the heart, determined by the X-ray. The skiagraphic pictures illustrating his article give unequivocal demonstration of the fact how important the rays really are in diagnosis. **SEGUY** and **QUENISSET** (*Comptes rend.* 1897, No. 14) observed on themselves, that after long exposure to the action of the rays, they experienced peculiar cardiac palpitation. One of their patients exposed to the rays for therapeutic purposes, experienced first a feeling of oppression, then violent palpitation of the heart, and finally dangerous arythmia. All symptoms ceased after further exposure, when the precordium was protected by a thick metal plate. J. **Boaz** and M. **Levy Dorn** (*Deutsch. med Wochenschrift*, 1898, No. 2), employed the rays for diagnostic purposes in affections of the stomach and intestines. They gave their patients gelatine capsules containing pure bismuth, which, as is well known, is impermeable to the ray. The capsules were surrounded with celluloid to avoid solution of the former in the gastro-intestinal tract. The capsules could be easily seen in the fluoroscope in non-obese individuals, and their migration through the stomach and intestines could be followed. After this manner stenoses could be detected owing to the capsules remaining stationary for a length of time at particular points of the intestinal tract. Anomalies in the location of the large intestine were also noted in some instances. The authors suggest that this method may be used in studying the action of certain medicaments (purgatives, opiates, etc.), on the gastric and enteric motility. **Bourgade** (*Les Rayons X*, April 23, 1898), presents what he asserts is a positive sign of death, and that is by taking a radiograph of the thoracic viscera. In the living subject, he says, one perceives with clearness, by means of the X-ray, the movements of the thorax, heart, and diaphragm. It is these movements which seriously interfere with radiography of the thoracic viscera. In all instances a radiograph of the living subject is necessarily blurred. The heart is not clearly defined, the convexity of the diaphragm is surrounded by interfering shadows. When life is extinct, however, all this is changed, the definition of the heart and the convexity of the diaphragm is perfect. His article is illustrated by a most excellent radiograph of the cas de Poinsignon, the pseudo-cataleptic of the cemetery Montmartre.

The Diagnostic Value of the Tuberculin Test in Human Tuberculosis.—Drs. C. F. **Martin** and G. D. **Robins** have reviewed this subject in a most instructive article in the *British Medical Journal*, in which they report their experiences with the diagnostic properties of tuberculin in human tuberculosis. Their results were very encouraging. They cite a number of other investigators who have had similar experiences. They tested cases of surgical tuberculosis in which an attempt had been made to remove all tuberculous tissue by operation. These investigations, however, are still in progress. In referring to contradictory results, the authors hold that failure to obtain the tuberculin reaction in cases of tuberculosis are due to three conditions: First, early cases of pure tuberculosis may fail to react through insufficient dosage; secondly, where marked mixed infection is present, the reaction may be much less pronounced, or at times quite absent; and thirdly, patients suffering from advanced phthisis are often quite incapable of reaction, from the very nature of their impoverished tissues and their impaired metabolism. The discredit into which the tuberculin test has fallen in human tuberculosis is due to two principal causes. It was found in the first place that the injections would rekindle quiescent foci in the tissues, or transform a local into a disseminated tuberculosis. The authors hold that where this has occurred the doses were evidently far in excess of those now employed. "Certainly it cannot be said," the authors claim, "that any recent observers in injecting 5 m.gm. or less of tuberculin have ever had evil results attributable to the injection." The second reason for the advancement of the test must be looked for in the apparently contradictory results which have followed its employment. The indications seem to be that if the necessary precautions are observed tuberculin will eventually be more universally recognized as just as valuable a diagnostic reagent in human tuberculosis as it is now conceded to be in the tuberculosis of cattle.—*Medical Review*, February 26, 1898.

The Blood in Pemphigus.—At a meeting of the Pathological Society of London, January 18, 1898, J. H. DRYSDALE showed microscopic specimens of the blood from a case of pemphigus taken 24 hours after the eruption of a fresh crop of bullæ. The blood showed some paucity of red cells and a remarkable number of eosinophile cells. Out of the leucocytes present no fewer than 69 per cent. were of this nature. Ten days later, when a fresh specimen of the blood was examined there were only 8 per cent. An increase of eosinophile cells was met with in many skin diseases, and in cases of bone disease, etc., but it was rarely that the percentage rose above 20. KANTHACK had described as many as from 30 to 50 per cent. in cases of pemphigus, and a high percentage had also been met with in trichinosis. But a similar increase is found in other skin diseases.—*Lancet*, January 22, 1898.

The Bacillus of Rheumatism.—TRIBOULET, COYON, and ZADOC report in *France Medicale* the bacteriological findings in a case of rheumatism with chorea, as follows: "Inoculations were made from the pleural and pericardial fluids, the blood from the vena cava inferior. a portion of the mitral valve and the lumbar cord. The pleuritic fluid gave no colonies. From the pericardial fluid numerous colonies of an anaerobic staphylococcus grew. From the other inoculations a bacillus corresponding to that claimed by Theroloix to be the etiological agent for rheumatism developed. It is large; stains by the usual methods. In milk, in 18 hours, it produces an intense fermentation, the milk separating into two layers. A fresh butyric gaseous odor is produced. Gas develops sufficiently to break the tube sometimes.—*Review Medicale—Western Medical and Surgical Gazette*, February, 1898.

The Agglutination Test in Yellow Fever.—The news comes from New Orleans that DRS. P. E. ARCHINARD and R. L. WOODSON, of the U. S. Army, have discovered an agglutination test to be used in the diagnosis of yellow fever. The test is made in the following manner: A drop of blood is taken from the lobe of the ear of the patient and dissolved in 20 times its volume of sterilized water. This is then placed in a culture tube containing yellow fever germs, which have been active and increasing for 24 hours. In from 5 to 30 minutes after the drop of suspected blood dissolved in 20 times its volume is put into the culture-tube, the germs in the blood become agglutinated and motility ceases entirely, which shows that the blood is that of a yellow fever patient. If, however, agglutination does not take place, yellow fever is not present. The yellow fever germ has been found in between 87 and 90 per cent. of the cases in which this test has been employed. Therefore, it must be superior to that of SANARELLI, by means of which the germ was found in only 47 per cent. of the cases.—*Medical News*.

Fibrinous Bronchitis.—GRANDY describes the histological appearance in the bronchi of a patient suffering from this disease who died of cardiac failure. He gives also a careful account of the microscopical characters of the casts. They had always been held to be fibrinous till NEELSON examined them in one case and pronounced them to consist of mucus, a view which had hitherto met with no support. Grandy, however, found the casts to consist apparently of fibres enclosing masses of leucocytes, and large swollen, round epithelial cells. WEIGERT'S fibril stain gave no coloration; theonin a faint pink; Curschman's spirals were absent, this being the sole point of difference from Neelson's results. The casts were thus composed of mucus and not of fibrin. With regard to the bronchi, the epithelium was intact except in a few spots. Weigert pointed out, many years ago, that fibrinous exudates only arose where the epithelium had been shed over large areas. In the case under notice, the goblet cells were unusually numerous, and the glands had undergone mucoid degeneration, their ducts being filled with mucus. The origin of the casts was thus obvious; their central portions had undergone some chemical change, resulting in the formation of a substance striking a brown instead of a pink color, with theonin. This change no doubt is the cause of the sticky and "fibrinous" character of the exudation. The whole process is thus analogous to pseudo-membranous colitis, and is probably a further stage of that which leads to the formation of Curschman's spirals. The disease is chronic, and as a rule not fatal. The author does not wish it to be assumed that the results obtained by Neelson and himself explain all bronchial casts; he regards it as possible that some may yet prove to be fibrinous in nature.—*British Medical Journal*, February 5, 1898.

MENTAL DISEASES AND MEDICAL JURISPRUDENCE.

By A. W. HOISHOLT, M.D., Assistant Physician, State Asylum for Insane, Stockton, Cal.

Myoclonus as a Stigma of Degeneration.—DR. D'ALLOCCO reports 24 cases of myoclonus collected in the course of two years, of which 5 were isolated or individual, the remaining 19 were met with among the members of five families. In all the cases the clonic muscle contractions were more or less scattered all over the body. In most of the cases the vibrations of the muscles were sufficient to produce slight changes in position of the members; in a few cases they caused violent jerking rhythmic contractions and sometimes chorea-like movements. All these forms were associated with neuropathy, showing anomalies in the development of certain parts of the body, especially of the head, as well as anomalies in the mental sphere. The cases of myoclonus occurring in families are frequently complicated with epilepsy. He considers myoclonus an elementary symptom, a result of the activity of motor neurons, the central location of which may be in the gray horns of the cord, as in the case of fibrillary contractions of the neurasthenic, in choreatic movements and in paramyoclonus; or the neurons may comprise an extensive group of motor elements, as in chorea electrica, "tics non douleureux;" or they may be higher psychomotor elements, as in maladie des tics (Charcot). The myoclonic condition need not, however, be confined exclusively to motor neurons; the higher sensory and psychic nerve elements may also discharge their energy in a sudden manner, the myoclonic phenomenon then appearing in a neuroclonic picture, in the form of impulsive acts, fixed ideas, and hallucinations. The identity of a spasm and a fixed idea, as formulated by Buccola, is not to be understood metaphorically, but is a real identity.—*Riforma med.—Centralblatt f. innere Medicin.*

Acromegaly with Dementia.—PROF. JOFFROY, of Paris, in a recent lecture, makes the following statements on this subject: "Cases of acromegaly observed

in young individuals not only show disturbances in growth, but also certain changes in the mental status of the individual, and when one associates these facts with the *post-mortem* finding of a very considerable affection of hypophysis cerebri, one cannot help ascribing to this latter a role in the development and nourishment of the organism, analogous to that of the glandula thyreoidea. This theory is supported by the coëxistence of acromegalia and giant growth. I will, in this connection, remind you of the interesting observation made by Dana, who found hypertrophy of hypophysis cerebri in 10 out of 12 autopsies on acromegalous giants It is supposed that this organ exerts an influence upon the growth of the extremities, and especially upon the elongation of the bones. As long as the epiphyseal cartilages exist the limbs are lengthened. Later, when these cartilages have disappeared, *i. e.* after normal growth has ceased, there is no further elongation, but only a thickening of the peripheral parts of the long bones. According to this idea acromegalia and giant growth have the same etiology, and are said to be one and the same disease, with the distinguishing characteristic of the age at which the disease makes its appearance, giant growth manifesting itself before, acromegalia after the period of development. This theory concerning hypophysis cerebri, which makes acromegalia and giant growth the same disease, seems, upon the whole, rational, and may be summed up as follows: hypophysis cerebri has functions with which we are not acquainted, but certain pathological facts seem to indicate that it plays a role in nutrition in general, and in the nutrition of bone, muscle, and vessel systems in particular. It is the activity of this organ which regulates the relationship between 'nutrition et dénutrition,' so that in the fully developed individual a stable equilibrium is maintained in the bone and muscle systems, while in the young person it regulates the development of these systems. Whenever there is an increase in the activity of the organ, by reason of a congestive or inflammatory process, there is a more marked development of the above named tissue systems, and the result is that the young individual becomes a giant, the fully developed person a case of acromegalia."
Progrès Médical—Hospitalstidende, March 30, 1898.

Katatonia.—DR. FREDERICK PETERSON, of New York, read a paper some months ago before the Neurological Society, in which he reported his observations in four cases of katatonia, inmates of the Hudson State Hospital. Katatonia, first described by Kahlbaum, he said, had been variously stated by different authorities as a form of melancholia, of circular insanity, of hysterical insanity, and by one author as a tonic atonic mania. The earliest symptoms were abnormal sensations in the head, vertigo, insomnia, irritability and a certain amount of gradually increasing melancholia. During the second stage, the patient often becomes maniacal, and it may begin with convulsions. Sometimes rhythmical movements under the control of the will, religious excitement, a tendency to talking and acting theatrically, or to rhyming, might be observed. These symptoms were often associated with catalepsy and a certain tonic state of the muscles. The rhythmic movements and the tendency to repeat words and strike attitudes are the chief points in the differential diagnosis from cases of melancholia manifesting atonic or cataleptic states. The muscular movements in katatonia differ from those of chorea by their variability, not being as in chorea, irregular, and involuntary. In his conclusions Dr. Peterson expresses the opinion that katatonia is not a distinct form of insanity, but a type of melancholia, and therefore suggests the term katatonic melancholia. He considers the prognosis in melancholia with katatonic symptoms more grave than in any other form. The treatment is the same as for melancholia —*Journal of Nervous and Mental Disease.*

Transitory Insanity.—DR. E. KALMUS, of Prague, reports a case of insanity of short duration caused by luetic disease of the cranial bones. It was observed in a woman 51 years of age, who had suffered from severe headache for three days. The chief mental manifestations were hallucinations and ideas of fear. After a thorough treatment with iodide of potash for 14 days the headache disappeared, and with it the psychosis.—*Prague med. Wochenschr.—Centralbl. f. innere Medicin.*

Tetany and Psychosis.—DR. F. SCHULTZE, of Rouen, Germany, reports the case of a young girl, 16 years of age, in whose family there was no history of neuropathy, who was to some extent feeble-minded, and had suffered for about a year from spasmodic attacks. A pronounced tetany was present with increased mechanical excitability of the facial, radial, ulnar and peroneal nerves, Trousseau's phenomenon, and increased electrical excitability. For weeks she had almost daily typical spasmodic attacks. There was no spasm upon intentional movements, as upon closing the eyes or doubling the fists. Sensibility was normal; knee-jerks diminished; stomach and bowels normal. These symptoms were followed for three months prior to her admission to the asylum, by a mild maniacal excitement, a constant laughter, great restlessness and hysteria-like spasms. At the time of her release from the asylum there still remained mild psychic and moral disturbances, some over-excitability of the facial, but no Trousseau. The patient was treated with iodide of potash, thyreoidine, and iodothyrine. The administration of the latter was followed by an increase of the spasms, combined with unconsciousness and a loss of reaction of the pupils. The case shows that the chemical virus causing the tetany may affect the central and most central neurons, as well as those connected with motility, sensibility, and the higher senses.—*Berliner klin. Wochenschr.—Centralbl. f. innere Medicin.*

Test for Feigned Blindness of Both Eyes.—PRIESTLY SMITH, of Birmingham, England, describes the following application of a new test for malingering: "A prisoner, awaiting trial, awoke one morning blind in both eyes, so he said. The man declared himself to be quite dark in both eyes, and acted the part of a blind man fairly well, overdoing it a little. The pupils were already under atropine, and could, therefore, give no evidence as to the light reflex. A lighted candle was placed before him in a dark room. He was not required to 'look' at the candle, being nominally blind, but the candle was placed about where he appeared to be looking. A prism was then placed before one eye, its base inward; instantly the eye moved outward. The prism was removed, and the eye moved inward. The man was told that his blindness would certainly disappear as quickly as it came, and he probably understood that the fraud would get him into more trouble if persevered in. His sight was soon restored." This test utilizes the involuntary tendency to avoid diplopia by "overcoming" the prism.—*British Medical Journal—American Journal of Medical Sciences.*

Paraldehyde Delirium Tremens.—DR. G. REINHOLD reports the following case of this rare condition: The patient, 41 years of age, had been taking two ounces daily of this drug. He could only stand with difficulty, intelligence was unimpaired, but speech was labored, the words being separated into syllables. His nutrition was enfeebled, skin pale, and brow covered with perspiration, eyes movable but deeply sunken, and his gaze fixed; pupils of average dilatation and reacted well to light. There were no painful points on head or spine; tongue was coated, and there was a marked tremor of hands and tongue. Spinal innervation was normal. The lungs showed marked emphysema; apex beat absent, the heart sounds muffled with accentuation of the second pulmonary; pulse slightly irregular, 90 to the minute, moderately full. The abdomen was retracted; the urine very acid, contained a large quantity of urates, had a specific gravity of 1030 but was free from albumin and sugar. The patient was sleepless, delirious, had ideas of persecution and hallucinations, but improved under sodium bromide and trional, and finally was discharged after 16 days of observation.—*Therapeutische Monatshefte—American Journal of Medical Sciences.*

Diabetic Pseudoparalysis.—DR. LANDENHEIMER has made a study of the much discussed, but not thoroughly established relationship of general paralysis and diabetes. He has had three cases of diabetes under observation, in which there were symptoms of general paralysis. In two of them, however, there was a second etiological factor besides diabetes, namely, abusus spirituosorum; only in the third case was diabetes the only apparent cause. This latter was a case in which glycosuria had been known to be present for more than 20 years. The general mental defects were observed at the age of 35 and began with loss of memory. During a course of treatment with Carlsbad water, an improvement set in at first, but afterwards there was a relapse of the mental enfeeblement, followed by a progressive change of character and leading to the commitment of criminal acts and arrest. Several temporary improvements coincided regularly with a diminution in the amount of sugar secreted, as brought about by a rigidly enforced diet. Although there appears to be an undoubted diabetic etiology in the case just related, the author does not consider it certain that the mental defects are direct manifestations of general paralysis; because, although the observed mental and somatic disturbances belong, in a general way, in the disease-picture of dementia paralytica, there is not a single part of it, which might not be interpreted as an accidental symptom of diabetes. The peculiarity of the case lies in this, however, that the different symptoms have become so combined as to form a complete picture of insanity. It is, therefore, not considered to have been demonstrated that diabetes can produce a genuine paralysis, and the writer thinks it more proper to apply the term diabetic pseudo-paralysis to this complex of symptoms —*Archiv. f. Psych. Centralbl. f. innere Medicin.*

A Hitherto Unknown Secondary Effect of Trional.—KAEMPFFER reports a peculiar effect of trional in four cases of carcinoma, the drug producing a wakefulness such as is occasionally seen as the effect of opium and some of the alkaloids. His patients suffered some weeks before the fatal termination of the disease from sleeplessness, and he gave each 15 grains of trional with the result that instead of getting a hypnotic effect, a peculiar state of excitement was developed, which lasted through the night. The patients, no one of whom was addicted to alcohol, and who had all taken the remedy in the prescribed manner, stated that they had noticed a certain fatigue soon after taking the medicine, but had not been able to go to sleep. Soon after this they were seized with extreme restlessness associated with fear and heart-palpitation, which grew worse and worse, until finally a delirium set in. Two of them even had visual hallucinations and during the attack of fear had jumped out of bed. This condition had continued till toward morning, followed by several hours of a restless, superficial sleep. In one of the cases a somewhat sounder sleep, lasting 6 or 7 hours, had resulted when the dose was reduced to 7½ grains and it had been administered late in the afternoon; in the other three cases, however, there was no difference in the results, nor was there upon increasing the dose to 30 grains. In this latter instance the condition of excitement was still further increased so that the administration of trional had to be discontinued.—*Therapeutische Monatshefte—Centralblatt f. innere Medicin.*

The Effect of Bromides on Epileptics and the Metabolic Changes Taking Place in the Body During the Opium-Bromide Treatment of Flechsig.—DR. LANDENHEIMER has made some interesting experiments on the subject of the metabolic changes going on in young and otherwise healthy epileptics, and has ascertained that enormous quantities of bromide of potash may be accumulated within the body. After a certain time the continued administration of bromides produces a saturation of the organism with the salt, in so far as the maximum of bromide excretion reaches the maximum of the daily introduction—in other words, the body is put into a bromine-equilibrium. These results explain the fact frequently observed, that an effect of the bromide is not observed at once, but after the remedy has been administered for some time, and also explains the circumstance, that the epileptic attacks which have been absent for months during the administration of bromides, may return at once in case of the discontinuance of the cure, even but for one day; *i. e.*, when the body has had its bromine-equilibrium disturbed. In connection with this report the author relates an observation which may throw some light on the mode of action of the much discussed opium-bromide treatment. In several instances it was observed that during the opium-period the daily quantity of urine excreted was considerably augmented; in one case, especially, was it noticed that the patient, who, prior to the opium treatment, had shown a typical paroxysmal diminution of urinary secretion, was entirely relieved during the opium-treatment. These facts can only be explained by assuming that during the attack a tonic spasm of the muscular coat of the renal vessels must have existed, which was removed by the opium.—*Neurol. Centralbl.—Centralblatt f. innere Medicin.*

Extract of Suprarenal Capsule in Cases of Apparent Death from Chloroform Narcosis.—DR. A. F. MANKOVSKY has made a series of animal experiments on dogs, in which he, after chloroforming them until apparently dead, injected several cubic centimeters of a 1 per cent. extract of suprarenal capsule into the external jugular vein. The investigation was prompted by the results of his earlier experiments showing the stimulating effect of extract of suprarenal capsule upon the heart. In most of the cases the animals were revived and recovered completely, when the extract was injected about 30 seconds after the beginning of the asphyxia. As such return to life does sometimes take place spontaneously, the investigator made control-experiments by, in some cases, simply suspending the administration of the chloroform after asphyxia had set in, in other cases by making use of the ordinary methods of resuscitation. However, none of these means enabled him to bring the animals back to life at a stage when extract of suprarenal capsule still gave excellent results. In a few cases in which the heart's action returned spontaneously, the

the animals finally died anyway from general weakness. Large doses of extract of suprarenal capsule have a toxic effect. The writer recommends, therefore, the intravenous injections of suprarenal capsules in all cases of chloroform asphyxia, using it in small doses as early as possible. All other attempts at resuscitation are only of value as auxiliaries to the injections.—*Russischer Archiv.—Centralblatt f. innere Medicin.*

A Case of Chronic Trional Poisoning.—DR. C. GEILL, of the Asylum at Aarhus, Denmark, reports such a case in a woman, 47 years of age, an inmate of the asylum, who, on account of restlessness at night, which had been uninfluenced by chloral, had been given 1.0 gm. of trional every evening. On the thirty-first day anorexia, constipation, and vomiting set in, and a week later great restlessness and in the evening an epileptic attack (the patient was said to have suffered from epilepsy when young), followed by an apathetic condition, diarrhea, paresis in all four extremities, a drooping of the left corner of the mouth, pointing of the tongue toward the left, a whispering, but intelligible speech, no inequality of the pupils, which react to light, reflexes diminished, no fever. After eight days the paresis became general, reflexes totally absent, anesthesia complete, decubitus developed, and death took place on the thirteenth day of the disease, subsequent to the development of a pneumonia on the right side. The urine was at first light yellow, free from albumin, afterwards becoming dark red, of the color of port wine, and was found to contain a red coloring matter, the spectrum of which, when in an acid alcoholic solution, gave the absorption band characteristic of hematoporphyrin when in similar solution. Three days before death a gradually increasing albuminuria set in. The autopsy revealed besides a pachymeningitis and hyperemia cerebri, a right sided hypostatic pleuro-pneumonia and a parenchymatous nephritis. It is difficult to say why a very moderate dose of trional, which had not been administered for a very long period, should in this case have led to intoxication. It is probable that this patient suffered from a mild constipation just before the development of the intoxication which caused a retardation in the excretion of the drug from the organism. That there was a preëxistence of the discovered parenchymatous nephritis, and that this had helped to produce the poisoning by interfering with the excretion of the trional is very improbable, as the albumin first appeared in the urine after the hematoporphyrin had ceased to be detected. Dr. Geill thinks that it was a case of toxic excretory nephritis, caused in his opinion more by the cumulative action of the trional than by an individual idiosyncracy.—*Hospitalstidende.*

Relation of General Paralysis to Morphinism.—DR. GIANNELLI speaks of the close connection at times existing between chronic morphine intoxication and general paralysis, to which Pichon and Crother first called attention, and reports three cases of chronic morphinism observed by him in the insane asylum at Rome, the symptoms of which made a perfect picture of a case of general paralysis. Gianelli concludes that morphine may have a direct deleterious effect upon the nerve elements as sugar appears to have in the cases of pseudoparalysis progressiva diabetica, recently described by Landenheimer, or the deleterious effect may be due to the disturbing influence of abnormal products of the metabolism which accumulate in the circulation in a case of chronic morphine intoxication.—*Riforma med.—Centralblatt f. innere Medicin.*

FORMULÆ.

By H. E. SANDERSON, Ph.B., M.D., Assistant Physician State Asylum for Insane, Stockton, Cal.

Bruises.—AUGER (*Sém. Méd.*) recommends olive oil for bruises. It is to be rubbed in, and then the area covered with material soaked in the oil.—*Practitioner*.

Cleaning Rusty Instruments.—BRODIE advises leaving rusty instruments all night in a saturated solution of chloride of tin in distilled water. Afterwards rinse in running water and rub with chamois.—*Clinique—Hot Springs Medical Journal*.

Turpentine in Scarlatina.—Turpentine hypodermatically, or by mouth, is said to prevent nephritis in scarlatina. Dosage not over one gramme for young children.—*American Journal of Medical Sciences—Pediatrics*.

Iodoform in Phthisis.—Internally, iodoform relieves cough and expectoration and soothes the nervous erythism. A good formula is:

(*a*) Iodoform.. .. ..2 gm.
Tannin ....4 gm.
ft. chart. No. 40. ..

Or (*b*) Iodoform...... 2 gm.
Naphthalin....2 to 4 gm.
ft. chart. No. 40.

Sig.—Two to 4 a day.—*Sém. Méd.—Therapist*.

Scrofulous Polyadenitis in Children.—DANCHEZ commends in the *Indépendence Médicale* the following formula for a resolvent application, as a part of the treatment:

Ammonium chlor..} 10 parts.
Tincture of arnica.}
Camphor. vinegar.} 75 parts.
Camphor. brandy.}
Infusion of rue ....300 parts.

Sig.—Wrap the neck with flannel wet with the solution.—*New York Medical Journal*.

Picric Acid for Blepharitis.—M. FAGE (*Echo Médical du Nord.*) endorses the use of picric acid in 5, 8 or 10 parts per 1,000 of glycerine and water, after freeing the lids from crusts.—*New York Medical Journal*.

Chilblains:

Calcii chloride ....gr. i.
Ungt. Paraffin .... ʒ i.

Sig.—Apply with gentle friction for five minutes at bedtime, and then cover with a bandage.—*American Practioner and News*.

Sodium Sulphate as a Hemostatic. REVERDIN, of Geneva, recommends sulphate of sodium, one and a half grains every hour, in grave capillary hemorrhages.—*Southern Practitioner*.

METEOROLOGY.

Summary for March, 1898.—*Temperature.*—The normal temperature of the State for March is 52.4°; the average for March, 1898, was 48.8°, a departure from the normal of -3.6°; the highest monthly mean was 65.2°, at Santa Ana; the lowest, 23.2°, at Bodie. The maximum temperature was 95°, at Salton, on the 2d and 6th. The minimum, -16°, at Bodie, on the 18th. The absolute range for the State was 111°. The greatest monthly range was 68°, at Tulare; the least, 30°, at Port Los Angeles.

Rainfall.—The normal precipitation for the State for March is 3.30 inches; the average for March, 1898, was .66 inches, a departure from the normal of -2.64 inches. The greatest monthly precipitation was 4.22 inches, at Morse's House; the least, nothing, at several stations.

Wind.—The prevailing direction of wind was northwest.

Unusual Features.—There were no unusual meteorological features for the month of March.—W. H. HAMMON, Forecast Official and Section Director.

California—Tabular Statement for March, 1898.

STATIONS.	Temperature.						Rainfall.		Mean Relative Humidity	Weather.			Wind.	Furnished by—
	Mean	Highest	Lowest	Mean Highest	Mean Lowest	Mean Daily Range	No. of Days Rain Fell	Total Rainfall		No. of Clear Days	No. of Fair Days	No. of Cloudy Days	Prevailing Direction.	
Auburn Cal.	45.8	70	30	----	----	----	3	0.32	----	23	0	8	N.E.	Southern Pacific Company.
Berkeley “	48.3	73	36	----	----	----	3	0.31	----	19	4	8	N.W.	Obs. University of California.
Colfax “	47.2	70	33	----	----	----	4	1.89	----	14	15	2	N.	Southern Pacific Company.
Coronado “	----	----	----	----	----	----	----	----	----	----	----	----	----	H. A. Masac.
Eureka “	46.0	61	30	50.6	40.5	----	15	1.80	82.0	14	8	9	N.W.	Weather Bureau Dept. Agr.
Fresno “	52.7	80	30	66.1	39.5	----	5	0.71	55.0	21	5	4	S.	“ “ “
Keeler “	49.8	78	30	----	----	----	0	0.00	----	20	9	2	N.	California and Nevada R. R.
Los Angeles “	55.0	81	36	67.0	44.0	----	4	0.98	62.0	15	14	2	W.	U. S. Weather Bureau.
Monterey “	53.4	68	36	----	----	----	5	1.27	----	18	0	13	S.W.	Southern Pacific Company.
Napa “	50.1	77	26	----	----	----	2	0.14	----	22	5	4	S.W.	Station Napa Insane Asylum.
Oakland “	51.3	74	35	----	----	----	4	0.25	----	18	9	4	N.W.	Chabot Observatory.
Paso Robles “	49.2	76	26	----	----	----	3	0.83	----	19	8	4	S.W.	Agr. Experimental Station.
Red Bluff “	52.0	76	30	64.0	40.0	24.0	1	0.01	48.0	25	4	2	N.	Weather Bureau Dept. Agr.
Sacramento “	52.0	76	30	62.9	40.9	21.9	1	0.04	59.0	17	11	2	N.	“ “ “
San Bernardino “	52.5	82	27	----	----	----	6	0.97	----	15	14	2	W.	A. K. Johnson, M. D.
San Diego “	54.0	77	38	62.0	47.0	----	5	0.91	68.0	21	2	8	N.W.	Weather Bureau Dept. Agr.
San Francisco “	48.0	51	40	74.0	44.0	11.2	5	0.24	72.0	14	12	5	W.	“ “ “
Santa Barbara “	54.4	78	34	----	----	----	2	0.28	----	22	3	6	W.	Hugh D. Vail.
Santa Cruz “	51.6	76	29	----	----	----	6	1.39	----	18	7	6	S.W.	Ralph Springer.
Yuma A. T.	59.8	86	34	73.6	45.8	----	2	0.39	36.0	22	7	2	W.	Weather Bureau Dept. Agr.

Blank (----) indicates data missing.

Occidental Medical Times.

COMMUNICATIONS are invited from all parts of the world. When necessary to elucidate the text, illustrations will be furnished without cost to the author.

SACRAMENTO: MAY, 1898

THE MEETING OF THE STATE SOCIETY.

The meeting of the State Society, at Fresno, the first that has been held in Central California, was, in many respects, a successful gathering, and very great credit is due to the Committee of Arrangements for its efforts to popularize the meeting. The local profession was well represented and there was a good attendance from the adjoining counties. The one prominent fault in connection with the meeting was the superabundance of material; the number of papers presented being larger than ever. This reduces the discussion to very meager proportions and renders it impossible to do justice to the better class of contributions. Some measures must be taken in future to guard against this matter of over-production. We believe that it is impracticable to conduct the business of our State Society in sections. On the other hand it is impossible to do justice to the subjects presented where the material is so voluminous. The remedy must, therefore, be found in some method of selection, which will, of course, mean elimination of the least valuable material.

Socially, the visitors were well received. The effort of the local profession seems to have been to provide the best that Fresno could afford. The magnificent development in farm, vineyard, and orchard, that that section has undergone within the past few years, affords a most interesting study of the possibilities in store for many sections in California and in the great West, where irrigation can be provided. Facilities were afforded the visitors to personally judge of this progress and to realize that, from present appearances, California is susceptible of vastly greater development. The banquet tendered by the local Society was a pleasant affair, in which friction and inharmony were, as usual, forgotten.

The only incident that marred the proceedings was an unfortunate difference between two members of the Society which occurred in open session and which almost degenerated into a free fight upon the floor. The combatants were DR. BEVERLY MACMONAGLE and DR. SAMUEL O. L. POTTER, of San Francisco, each of whom had espoused opposite sides in the election of President for the ensuing year. DR. MACMONAGLE, in supporting the candidacy of DR. W. WATT KERR, of San Francisco, for this office, and while carried away by the heat of the fray, attacked the opposition in language and in kind not strictly parliamentary, being rather more direct and personal than is permissible in ordinary debate. DR. POTTER, who represented the candidacy of DR. W. F. MCNUTT, of San Francisco, resented the statements and imputations or charges of DR. MACMONAGLE in a decidedly heated manner, and the result was that which usually occurs between two angry men desirous of freely expressing their opinions and feelings. It is true that the incident was a small one, yet small as it was it was a very disgraceful affair, and the first, we believe, that has ever occurred at a meeting of the State Society. It is particularly to be regretted as it brings into the conduct of a scientific society of medical gentlemen the manners and methods of a local political convention or of a ward caucus. From all the evidence obtainable, and in the absence of personal observation, we are constrained to believe that both parties to the fray were at fault. On the question of assault, the evidence is very conflicting, though there is no question that DR. POTTER inflicted upon his adversary an injury which, though slight, might readily have been of the most serious character. The election resulted in the choice of DR. KERR, of San Francisco. It is no disparagement to his opponent to say that DR. KERR will make a very much better presiding officer. He has had a long and ample experience in the practical workings of the Society that should enable him to know better than any one what is needed to insure a successful meeting. In the chair, we believe he will be firm, prompt, and impartial, and if seconded by an efficient Committee of Arrangements, the next annual meeting ought to be a marked success.

NOTES.

Officers of the State Society.

At the meeting of the State Society held in Fresno, April 19th to 22d, the following were elected officers for the ensuing year: President, W. Watt Kerr; First Vice-President, A. J. Pedlar; Second Vice-President, G. L. Cole; Secretary, D. A. Hodghead; First

Assistant Secretary, Z. T. Malaby; Second Assistant Secretary, B. A. Saunders; Treasurer, Thos. Ross; Board of Censors, W. J. G. Dawson, G. H. Powers, Geo. B. Somers, Emmet Rixford, P. K. Brown; Board of Examiners, C. C. Wadsworth, E. G. Frisbie, Washington Dodge, J. M. Williamson, E. E. Kelly, F. B. Carpenter, J. H. Barbat; Alternates, E. S. Howard, A. P. Woodward, P. M. Jones. The meeting of 1899 will be held at the Hotel del Monte, Monterey.

SOCIETY PROCEEDINGS.

SACRAMENTO SOCIETY FOR MEDICAL IMPROVEMENT.

Regular Meeting, February 15, 1898.

The President, W. J. HANNA, M.D., in the Chair.

Dysmenorrhea.—DR. C. O. CARTWRIGHT read a paper upon this subject. He said: The conditions of the uterus with its physiology, differentiates the special function of the cellular make up, the cell becoming impaired the pathological condition following. Menstruation is a function of the female genital organs occurring periodically, beginning at puberty, ceasing at the menopause, here differentiate between normal and abnormal menstruation the effect of climate, habit, and occupation. Few women escape some deviation of normal menstruation. Where the flow should be attended with slight indisposition, it is passed with more or less pain, increased abdominal fulness, reaching a degree necessitating the patient to keep her bed and seek medical aid. Difficult and painful menstruation, termed dysmenorrhea—signifying laborious or painful menstruation—is not itself a disease, but a symptom of a pathological condition. The speaker concluded by reviewing the different varieties, their causes and treatment.

DR. W. A. BRIGGS: There is one point on which I am not in accord with the author, and that is with regard to malaria being a frequent cause of dysmenorrhea. It is not in accord with my observations that malaria is a cause of this trouble. In the treatment of this condition, while I think the doctor has gone over the ground thoroughly, there have been one or two omissions from the remedies which seem efficient. Acetanilid, phenacetin, and codeine, and others of that group of remedies, are very often beneficial in these cases, particularly when combined with codeine. I frequently give codeine and phenacetin for the purpose of relieving these cases. Ten grains of phenacetin and half a grain of codeine every hour, for two or three days, will relieve severe cases. These are only palliative measures. Of all the radical measures, dilating and curetting are the most important. I think an error generally made in dilatation is lack of thoroughness and not often enough. I think, almost always, curettage should be combined with thorough dilatation. Even when done thoroughly and early, we will have relapses. With galvanism I have had good results, but my observation leads me to believe that it is not permanent. I have seen more relapses from cases apparently cured by electricity than I have after dilatation and curettage.

DR. T. W. HUNTINGTON: What is the better practice in those cases which comprise young girls, from puberty to 17 or 18, who suffer from this condition?

DR. BRIGGS: It would depend upon the cause of the trouble. When of neurotic origin and when the disease commences early in menstrual life, medical treatment is necessary because of the local trouble which is ubiquitous throughout the nervous system. In those cases I think the most important thing is to, first, as far as possible, tone up the nervous system by out-door life and such other measures as are used in similar conditions, and if relief be not obtainable, and if there be stenosis with a sensitive condition of the internal os, dilatation and curettage should be resorted to in those cases also. I believe a great many cases which seem to be neurotic are only partly so. Even in exaggerated cases with implication of the central nervous system which leads to an exaggerated expression of pain—even in these cases the local condition must be treated as in other cases which are not distinctly neurotic. In these cases there is malnutrition and we have a secondary disturbance depending upon it in which malaria plays a part. All those conditions which dispose to an exaggeration of the nervous symptoms should, of course, be corrected.

Dr. G. A. White: The use of pessaries is pretty well gone out of fashion. I remember some years ago when this subject was before the Society, we had an assortment of pessaries—all sizes and shapes. At that time we had Dr. Cluness with us and I remarked to him that I had not been able to master the mysteries of the pessary, and I wish to say that I do not know anything more about it now.

Dr. T. A. Snider: I have met with considerable success with electricity in obstruction of the cervix. In cases that seemed permanent I have seen a number that have not relapsed. I have treated cases in which pain and suffering had been intense from puberty, with the galvanic current passing directly through the uterus.

Dr. F. R. Waggoner: I want to insist upon malaria being a cause of dysmenorrhea. I do not know whether the author has practised in a country where malaria was rife or not, but I have. In some parts of the country, especially in the Mississippi Valley, where it is the rule to have fever three months in the year, women will be taken down with fever and become thin and anemic. In all of these cases, and especially among the young, there was some form of menstrual derangement—amenorrhea, more commonly dysmenorrhea, which was very persistent as long as the patients were in that condition. Of course it was functional. The usual antimalarial treatment was resorted to, with anodynes, to give relief.

Dr. L. A. Harcourt: The author complains that after curetting, the dysmenorrhea often returns or continues, and the menorrhagia, if it existed, is not cured. In such cases the curettage has probably been defective. To obtain the best results, the work must be thorough, every part of the diseased surface must be scraped. After dilatation of the cervical canal, the uterine cavity should be irrigated with a hot disinfectant solution, to carry away the secretions. Then the whole uterine cavity should be gone over, first the anterior surface, next the posterior wall, then the lateral surfaces, and finally the fundus. For this the dull or semisharp curette should be used. The tissues are generally softened from inflammation, and the flabby granulations easily removed. The mucous membrane should not be removed down to the muscular wall, but only the diseased tissues. The granulations are soft, friable, not firmly adherent, and may readily be removed by the dull instrument. To reach the cornea and remove the granulations around the orifices of the tubes, the smallest curette will be necessary. Finally, the tough granulations blocking up the cervical canal and about the os internum should be removed with the sharp curette, otherwise they will obstruct the drainage from the uterine cavity, and painful menstruation will continue. During the whole operation, the cervix should be drawn down and steadied, by a tenaculum. The curettage finished, the cavity should be thoroughly irrigated with a hot antiseptic solution, which should be repeated every 24 hours for a week, and afterwards at longer intervals until healing is complete.

Dr. J. H. Parkinson: I want to say a word in connection with Dr. Harcourt's remarks and to differ from him. It seems to me that in curetting the uterus the object is to remove all the diseased tissue, and to do this thoroughly it is necessary to employ a sharp curette. I am aware the doctor has good authority when he speaks of the use of the dull curette. As far as my experience goes the dull curette seems to be an instrument of little service. A dull curette will not take off anything that is not raised above the plane of the uterine mucosa. It seems to me that the plan advocated by the doctor, namely, a distinction between anterior, posterior, and lateral walls, unless it be in skilful hands, is rather beyond the power of the average practitioner. The uterine cavity and the uterus itself is of a different shape from the uterus after abortion, or after labor, and it seems to me that in curetting in these cases, by far the better plan is to start from a fixed point and endeavor to get back to it. One has to follow a method or rule. I think this is a better plan because the distinction between the anterior, posterior, and lateral surfaces in the uterus that has not been enlarged by the presence of neoplasms, etc., must be largely theoretical. The cavity is so small that it is hard to distinguish between.

DR. HARCOURT: It is not necessary to begin on the anterior wall or any other part of the uterine cavity. The object is to curette the whole surface. That no part may be missed, it is well to begin at a particular point and work around until you return to it. In this way, the work is more likely to be complete, but it is immaterial where one begins. I have already explained why, in most cases, the dull or semisharp instrument is preferable in the uterine cavity. It is very much safer, and, in the majority of cases, just as effective.

DR. H. L. NICHOLS: A good pessary, properly adjusted, will, in many cases of displacement of the uterus, afford great relief. While I am aware it has been used and abused, I believe it is a very useful instrument, when used at the proper time. Very few things come up, that are new in our profession, that are not carried to extremes. No doubt the pessary has been abused.

Regular Meeting, March 17, 1898.

The President, W. J. HANNA, M.D., in the Chair.

Election of Officers.—This being the annual meeting, the following were elected officers for the ensuing year:

President...F. R. WAGGONER.
Secretary and Treasurer...............................W. H. WENTWORTH.
Directors..... } F. R. WAGGONER, G. L. SIMMONS, H. L. NICHOLS, W. A. BRIGGS, W. H. WENTWORTH.

The Sanitary Corps, National Guard, California.—DR W. J. HANNA read a paper upon this subject He said: At the session of the Legislature held in 1897, a new section was added to the Political Code of California, which was approved April 1st of the same year. By this section the medical department of the National Guard of California was organized into a Sanitary Corps. The executive head of the Corps is one Surgeon-General with the rank of Colonel. The commissioned strength of the Sanitary Corps is as follows. To each organized division, one Chief Surgeon with the rank of Colonel; to each organized brigade, one Chief Surgeon with the rank of Lieutenant-Colonel; to each organized regiment, one Surgeon with the rank of Major, and a Surgeon with the rank of Captain for each battalion. The appointment of the commissioned officers of the Sanitary Corps is made by the Commander-in-Chief upon the recommendation of the division, regimental, or battalion commanders. He is authorized to transfer enlisted men of the National Guard to the Sanitary Corps, or to cause to be enlisted for the same as many hospital sergeants, hospital corporals and privates as the service may require, who may be mounted, and permanently attached to the Sanitary Corps. No person shall receive the appointment as surgeon unless he is a licensed graduate of a medical school, and unless he shall have been examined and approved by a medical board, consisting of not less than three surgeons designated by the Commander-in-Chief, upon the recommendation of the Surgeon-General. Privates of the Sanitary Corps shall do duty as cooks, nurses, and attendants in hospitals, and as stretcher bearers and ambulance drivers and attendants in the field, and such other duties as may be required of them by proper authority. The members of the Corps shall be equipped and uniformed the same as the same department in the United States Army. By the passage of this Act the medical department of the National Guard has been able to build up a symmetrical, well organized body of men who are properly equipped and furnished with field chests, hospital furniture, litters, and pouches, which enable them to render efficient service. The appointment of officers is made by a medical head after an examination requiring some qualifications in peace instead of, as in former times, having the appointments made by some political Colonel not capable of judging of the medical necessities of military life. In a report of the recent encampments held in this State the regular army officer said of this department, "that, although not entirely completed, the reorganization had reached such a high state of efficiency that it augured well for its future."

DR. F. GUNDRUM: Sanitation in the army is a very important thing. The

Greeks all had some kind of medical relief for their wounded and sick, and we find that to be the history of nearly every army in history; but it has been only within our own time that scientific measures have taken the place of the unscientific. I consider it one of the most essential things for an army and for the individual soldier to have knowledge that in case of accident, or of being wounded, he is going to have proper attention; that his life is going to be saved, and every means taken to relieve his suffering. It is considered that soldiers fight better under such circumstances. I believe that in our militia, up to within a very few years, this part of the service has been very much neglected. In our militia in Michigan we had nothing to compare with what the author mentions to-night. As to the procedure in California, and what we had then, it looks like an advance of 500 years, and it is only a short period of 15. I believe that the sanitary service in the army cannot be made too efficient. It is absolutely essential and necessary, and there certainly should not be anything of a more humanitarian character than to see to the soldier when sick or wounded. I believe that every man in the service should be instructed in regard to applying bandages, to staunch hemorrhage, and what to do in regard to the different wounds.

Dr. L. A. Harcourt: I believe it is right to make these officers earn their salaries by instructing the men as to how they should act in emergencies. If the course as laid down by Dr. Hanna is followed out much success can be attained. Something similar to that is carried out in Chicago. The police have to attend lectures from medical men on the subject of management of accidents and injuries, and the handling of such cases, and the result is that very much good has been accomplished. I am very glad to see such an interest taken in this matter.

Dr. H. D'Arcy Power: I think it would be a good idea if the police generally were instructed in certain matters. There is no doubt that cases of epilepsy are allowed to die from the fact that the police are not instructed. If they were it would often be a saving of life, or of discomfort, as such patients are often supposed to be drunk.

Dr. J. H. Parkinson: In regard to instructing the police, I wish to say that during my term of office as City Physician I gave them private lessons, and they seemed to receive my instructions with considerable interest, and to my knowledge it was useful in several ways. As referred to by Dr. Power, my instructions were that no patient who was brought in in an unconscious condition should be put by himself, and that in all profoundly unconscious cases I was to be immediately notified. It is probably true, as the Doctor says, that cases of epilepsy or of fracture of the skull and of cerebral hemorrhage, are supposed to be intoxicated. If a police officer merely smells the odor of liquor on the breath, he classes the patient as a "drunk," and he is put into a cell and left there. It is not uncommon to find patients, who have been treated in this manner, dead next morning. No patient of this kind should be put away without medical assistance, and he should never be put in a cell alone.

Dr. H. L. Nichols: The author's paper has brought before my mind matters that are of great importance. I can recall being told by members of the late war that many lives were sacrificed by men who called themselves "doctors." As things are progressing now it seems that this department of the National Guard is in a very flourishing condition, and when our men are called they will be prepared to do sanitary work. I agree with Drs. Power and Parkinson in their remarks regarding instructing the police. I have not instructed them frequently, but the excellent work done by Dr. Parkinson made such an impression that they still adhere to their training, and I did not think it necessary to instruct them.

Dr. F. R. Waggoner: The Medical Corps as put forth is admirable, but however admirable the medical staff may be, unless the personel of the physician or surgeon is of such a character in relation to his fitness, much of the usefulness of the Medical Corps will be sacrificed. I will mention an experience I had during the late war. It was on the Arkansas river, in 1863, where I relieved a very distinguished surgeon, Dr. Seville, who was a very arrogant man. He treated his men as though they were dogs, and they conceived such a hatred toward him that they would sooner go without treatment than approach him. I came into possession of these facts and I resorted to entirely different tactics. I treated the men as defenders of their country, and I gave instructions that any man who was unable to perform duty to bring him to me and I would attend to him. In a short time I won their friendship, and there was not a man of them who would not lay down his life for me.

Dr. W. J. Hanna: I thought this subject ought to be brought before this Society so that each individual might understand something of the work of the Sanitary Corps. Previous to the adoption of this measure by the last Legislature there was no such thing existing as a Sanitary Corps. Surgeons were required to treat the men and furnish their own medicine. I think if this subject is brought before the different medical societies by surgeons who are interested in the Sanitary Corps, when the next Legislature meets, they will be able to see the need of this branch and its requirements, and we can go ahead and fully equip ourselves for business.

SAN FRANCISCO MEDICO-CHIRURGICAL SOCIETY.

Regular Meeting, March 7, 1898.

The President, F. B. Carpenter, M.D., in the Chair.

Mastoid Operations.—Dr. A. Barkan presented six cases in varying stages of convalescence, all of which had been operated upon after the method of Macewen. He said: Professor Macewen, who has done more work for brain surgery than any other man living, lays down his reasons for operating in the following terse sentences: "When the tympanic cavity has become the seat of chronic suppuration, with ulceration of the mucous membrane extending into the antrum of the mastoid cells, it becomes a standing menace to the safety of the patient. The disease progresses insidiously, and one cannot be certain as to where or when it may end. One might as well have a charge of dynamite in the mastoid antrum and cells, as when one cannot know the moment when accidental circumstances may arise, and which may cause the infective matter to be disseminated all over the cerebro-spinal system. Chronic otorrhea is much too lightly regarded and is frequently considered as a mere inconvenience instead of as a menace to life. One who has a chronic purulent inflammation of the middle ear is liable to have, with very little warning, a most serious or even a fatal illness; and the practitioner should never rest satisfied until every such discharge is cured. Macewen's indications for operating in the mastoid, the same as those made before him by Schwartze, are: (1) Repeated inflammations of the mastoid antrum and cells, accompanied by swelling of the mastoid process; bony fistula discharging pus; acute inflammation of the mastoid antrum and cells with retention of pus within them. (2) Initial symptoms of intracranial involvement associated with purulent otorrhea. In this instance operation should be immediate, and all the diseased parts in the middle ear should be cleaned out. (3) Persistent chronic otorrhea which has long resisted treatment, even although there be no abscess, edema, or inflammatory indication in the mastoid; especially if the discharge, even though odorless, should contain virulent pathogenic organisms (4) Otherwise incurable neuralgia in mastoid process. In over 20 cases operated upon within the past 18 months, I have followed with unerring certainty Macewen's route into the antrum, by which it is almost impossible to injure the sigmoid sinus, or to invade the middle fossa of the skull; and if care be taken there is little danger of encroachment upon the fallopian canal and facial nerve on the one hand, nor upon the semicircular canals on the other. On the skull of either living or dead subject it is easy to find the "supra-meatal triangle." Immediately above the bony external meatus may be seen the posterior root of zygoma, which forms the upper side of the triangle. The upper posterior sequent of the osseous part of the external meatus joins it in front and forms the lower side of the triangle. An imaginary perpendicular line drawn from the most posterior portion of the external osseous meatus will cross the other two sides and form the posterior side of the triangle. The opening should be made with a burr and not with a chisel in this triangle, and should touch the base of the triangle and follow along the posterior wall of the osseous auditory meatus. The first incision is a perpendicular one down to the bone behind the auricle and extends from the posterior root of the zygoma nearly to the tip of the mastoid, and is about a quarter of an inch posterior to the external osseous meatus. The periosteum is pushed back, the auricular attachments are separated and the auricle and soft parts are drawn forward far enough to expose the posterior border of the external osseous meatus. The outlines of the triangle are now made out from the landmarks above given. The burr, driven by the surgical engine or by a motor, the hand piece of which is held in the hand like a pen, is applied lightly to the supra-meatal triangle. It may be, perhaps, at a depth of a centimeter or more before the first of the mastoid cells are encountered. With the slightly curved and bent searcher explore the cell; then proceed with the burr until one cell after another is opened, and finally the antrum of the mastoid is reached, where pus will be found welling out, or granulation tissue, broken down tissue, or cholesteatomatous masses will be encountered. Then with a sharp spoon the septa of bone are broken down and the antrum is thoroughly cleared out. The edges of the bony opening are then beveled down smooth and finely and carefully finished in order to avoid subsequent infection. No fluid is injected from the antrum into the middle ear; but instead the antrum, middle ear, and external auditory meatus are thoroughly cleansed and dried and loosely filled with iodoform and boracic acid (1:4), or lightly packed with iodoform gauze. This dressing is untouched for about a week. The after-treatment must be painstaking and thorough, and many months are required to bring the cases to a successful healing. When it is desired to make the opening a permanent one, some one of the different methods may be selected, whereby, by incising the external meatus, cutaneous flaps are found with which to line the bony cavity. I particularly wish to insist upon two points in connection with this work: (1) Macewen's supra meatal triangle is the point of entrance into the mastoid antrum. (2) The burr, and not the chisel, is the best and by far the safest, although the slowest acting instrument for doing surgical work upon the mastoid.

ALAMEDA COUNTY MEDICAL ASSOCIATION.

Regular Meeting, April 12, 1898.

The President, H. G. THOMAS, M.D., in the Chair.

Honorary Member.—DR. A. BRUENN, an old and valued member, was placed on the honorary list.

DR. J. L. MILTON read a paper on "The Various Uses of Normal Salt Solution." [Published at page 238.]

DR. H. A. L. RYFKOGEL: It is now the consensus of opinion among bacteriologists that it is inadvisable to irrigate fresh wounds with irritating antiseptic solutions. Many others claim that it is equally inadvisable to use these solutions in infected and granulating wounds. Blood serum has been shown to have a decided bactericidal and antitoxic action. The cells of the tissue probably have also the property of producing substances antitoxic and antiseptic. The latter property has been shown to reside, to a remarkable degree, in granulating tissue. Thus anthrax bacteria placed in granulating tissue, did not infect the organism, but were destroyed inside of 24 hours. Further, the organism now became immune to hypodermic injections of the microbe When we irrigate with antiseptics we destroy the superficial layer of cells, and instead of vital material, able to resist the invasion of bacteria, we have dead material that will form an excellent culture medium for them. As in infected wounds some of the bacteria must be below the surface, they will not be reached by the germicidal solution, but will remain to inoculate the culture medium. If they were all upon the surface they would be mechanically removed by the saline solution. Solutions in abscess cavities will lessen the resistant properties of the living granulating tissues.

DR. S. H. BUTEAU: We should be cautious in the use of saline solutions in shock without hemorrhage. You do not want to increase the arterial tension, and the saline solution will dam up the blood in the capillaries and small blood vessels.

DR. CHAS. M. FISHER: The cause of shock is change in the nerve cells. They are exhausted, and undergo a trophic change, and are incapable of receiving or conveying stimulus to the circulatory apparatus. This is why we get no results from strychnine and other heart-stimulants. So, knowing the pathological condition, very little can be expected from the saline solution. In profound shock we practically have no nerve cells.

The President: I have had good results follow the injection of saline solution through the eustachian tube in dry catarrh of the middle ear.

Dr. R. C. Krone: It is well to bear in mind that the mammary gland is often the most available place for the injection of saline solution.

Dr. R. T. Stratton: I prefer the intravenous method, in shock with hemorrhage, but saline solution should be used in shock without hemorrhage. In cases of eclampsia, sepsis, uremia, septicemia, Pozzi uses this method in puerperal septicemia.

Dr. J. S. Eastman: I use the saline solution in dysentery, washing out the rectum with the solution after stool. It relieves the tenesmus. It ought to be good in typhoid fever.

Dr. H. N. Rucker: I believe in the saline solution in shock, but I have also had good results from applying heat over the heart.

Dr. Chas. M. Fisher read a paper on "A Case of Myxedema of 17 Years' Standing Successfully Treated." The patient was present and was ample proof of the results obtained.

Dr. R. C. Krone read a paper on "Suprapubic Varicocele-ectomy."

Dr. J. L. Milton: I saw the operation and most heartily endorse the method. You get a better aseptic field, and you have better control of the parts. The testicle can be brought into the field of operation. Dawbarn, in his operation for castration, uses this suprapubic incision, and draws the testicle up into the wound, and ligates and removes it.

Dr. J. S. Eastman: I was present at the operation and think that it is in many ways superior to the other method. It is easier to perform, and leaves no scar.

REVIEWS AND NOTICES.

Spinal Caries (Spondilitis or Potts' Disease of the Spinal Column). By Noble Smith, F.R.C.S., Ed., L.R.C.P., London, Surgeon to the City Orthopedic Hospital, Surgeon to All Saints Children's Hospital, etc. Second edition. London: Smith, Elder & Co.; pp. 154. Price, 5 shillings.

Second editions offer a reasonable guarantee of the value of the original work. This volume is based mainly upon the observations and experience of a careful, painstaking, ingenious worker. In a monograph of 150 pages, the author has discussed his subject in a masterly and systematic manner, and has added much to our practical knowledge in this department. The illustrations are clear and helpful, and possess peculiar interest to the reader, because of their being the work of the author, who, in his preface, assumes all responsibility for possible inaccuracies.

Hugh Wynne, Free Quaker, sometime Brevet Lieutenant Colonel on the Staff of his Excellency General Washington. By S. Weir Mitchell, M.D. New York: The Century Co.

Dr. S. Weir Mitchell's popular novel "Hugh Wynne" comes to us as a renewed evidence of the doctor's versatility. It is a most interesting tale of the Revolution, told with a fidelity to history and with a sweet quaintliness of manner that holds one thoroughly absorbed throughout the two volumes. The chief theater of action is in the old quaker city of Philadelphia, where was born and raised the sturdy hero. The story brings us into touch with the old colonial society, an introduction and acquaintance that is very delightful. From the gay doings of these gay people, the tide is turned to oppressive taxation, and all the stirring incidents of the Revolution and of the great crisis in the early history of our country, the prominent characteristics of which are brought very vividly before us. One of the most interesting and touching scenes is that of the capture and execution of André; of Hugh's visit to the doomed man in the cheerless room of an old Dutch farm house, where he is quite overcome with grief at the sad plight of the poor Englishman. The novel is certainly clever and delightful, and well deserves its great popularity.

MEDICAL NEWS.

LICENTIATES OF THE BOARD OF EXAMINERS.

At a meeting of the Board of Examiners, held April 3, 1898, the following were granted certificates to practise medicine in this State:

James L. Camp, Brainerd, Minn.; Rush Med. Coll., Ill., Feb. 26,'78.
Colin R. Clark, Brainerd, Minn.; Med. Dept. Univ. Penn., June 13,'95.
Walter Courtney, Brainerd, Minn.; Med. Dept. Univ Mich., June 28,'83.
Chas. G. Cruikshank, Los Angeles; Med. Dept. Univ. Mich., Mar. 29,'76.
Murdoch McLean, San Francisco; Med. Dept. Univ. Cal., May 12,'97
Jas. H. McLeod, Healdsburg; Marion-Sims Med Coll., Mo., Apr. 2,'96.
Frank Abraham McMahon, San Jose; Med. Dept. Univ. Cal., May 12,'97.
William Acland Heywood Oronhyatekha, San Francisco; Trinity Univ., Toronto, Canada, June 28,'92.
Geo A. Pruitt, Whittier; Med. Dept. Coll. of Ohio, Feb. 12,'77.
John E Purdon, Turlock; Trinity Coll., Dublin, Ireland, June 25,'85.
Alexander Reid, Stayton, Or; Med. Dept. Univ. Oregon, Apr. 1,'96.
Marion F Reiffert, Quincy, Ill.: Keokuk Med. Coll., Iowa, Mar. 16,'97.
Sidney Johnson Tabor, Pocahontas, Va.; Vanderbilt Univ and Univ. Nashville, Tenn. Mar. 1,'94, Mar. 1,'93.
John A. Thabes, Brainerd, Minn.; Med. Dept. Univ. Minn., June 6,'96.
R. H. Tremper, Ontario; Med. Dept. Univ. Mich., June 30,'75.
Wm. J. Waller, Sacramento; Med. Dept. Univ. Vermont, July 5,'97.
Benj F. Weaver North Ontario; Rush Med. Coll. Ill., Mar. 28,'93.
Geo. F. Witter, San Jose; Med. Dept. Univ. Mich., Mar. 6,'56.

CHAS. C. WADSWORTH, Secretary.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the U. S. Army (Division of the Pacific) from March 20, 1898, to April 20, 1898.

Upon the recommendation of the chief surgeon of the department, Major Edward B. Moseley, Surgeon, now at Benicia Barracks, California, will proceed to Fort Mason, California, for temporary duty as surgeon of that post and as assistant to the chief surgeon of the department in the duties of attending surgeon in San Francisco, during the absence of Captain Charles M Gandy, Assistant Surgeon. Upon completion of this duty, Major Moseley will return to his proper station. Par. 1, S. O. 35, Dept. of Cal., April 20, 1898.

The order assigning First Lieutenant George Rauchfuss, Assistant Surgeon, to Fort Apache, Arizona Territory, is revoked

First Lieutenant George Rauchfuss, Assistant Surgeon, resigned April 2, 1898.

Captain Edward Everts, Assistant Surgeon, upon the abandonment of Whipple Barracks, Arizona Territory, is ordered to Fort Apache, Arizona.

First Lieutenant Alexander S Porter, Assistant Surgeon, is relieved from duty at Whipple Barracks, Arizona, and, upon expiration of his present leave of absence, is ordered to San Diego Barracks, California, for duty.

Official List of Changes in the Medical Department U. S. Navy (Pacific Station) from March 20, 1898, to April 20, 1898.

Past Assistant Surgeon A. Farenholt detached from Puget Sound Naval Station and ordered to R. S. "Independence," Mare Island, Cal.

Surgeon A. G. Cobell, unexpired leave revoked and ordered to Puget Sound Naval Station.

Past Assistant Surgeon L. L. Young, detached from "Albatross" and ordered to "Mohican," Honolulu.

Past Assistant Surgeon F. W. Olcott detached from "Mohican" and ordered home to await orders.

Assistant Surgeon J. C. Pryor from Naval Hospital, Mare Island, to "Albatross."

Past Assistant Surgeon C. P. Bagg from "Adams" to "Pensacola," Mare Island, Cal.

Past Assistant Surgeon A. Farenholt from "Independence" to Naval Hospital, Mare Island.

ITEMS.

Dr. L. E. Phillips has removed from Point Arena to 1817 Baker street, San Francisco, Cal.